Issue 47

P.S.

1956 Series

THE PREVENTIVE MAINTENANCE MONTHLY

FIRST-MOSTLY

'Way back in the Civil War days there was a general who said that the man who wins battles was the one who got there "fustest with the mostest."

Old General Nathan Bedford Forrest's idea still is a pretty good one—as far as you are concerned. You know that you by yourself can't very well stand off a whole company or battalion. You need the help of all your buddies and their equipment.

The job of everybody in this man's army is to get a rifle or machine gun bullet or an artillery or mortar shell delivered to the right spot at the right time—first with the most. It's your job, whether you're a rifleman, gunner, driver, cook, mechanic or supply man.

That's where maintenance of your equipment comes in. Keep those rifles, tools, tanks, trucks, guns, radar units and such maintained right and they'll deliver the stuff for you. Goof-off on maintenance—and you've had it. Half enough too late just won't get it.

So, help to make it "fustest with the mostest"—through better maintenance of your equipment.

It pays.

FIRST - MOSTLY

'Way back in the Civil War days there was a general who said that the man who wins battles was the one who got there "fustest with the mostest."

Old General Nathan Bedford Forrest's idea still is a pretty good one—as far as you are concerned. You know that you by yourself can't very well stand off a whole company or battalion. You need the help of all your buddies and their equipment.

The job of everybody in this man's army is to get a rifle or machine gun bullet or an artillery or mortar shell delivered to the right spot at the right time—first with the most. It's your job, whether you're a rifleman, gunner, driver, cook, mechanic or supply man.

That's where maintenance of your equipment comes in. Keep those rifles, tools, tanks, trucks, guns, radar units and such maintained right and they'll deliver the stuff for you. Goof-off on maintenance—and you've had it. Half enough too late just won't get it.

So, help to make it "fustest with the mostest"—through better maintenance of your equipment.

It pays.

PS—THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 47 1956 Series

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limitations of availability, older issues may be obtained direct from Preventive Maintenance Agency, Raritan Arsenal, Metuchen, New Jersey.

IN THIS ISSUE

FEATURE ARTICLES

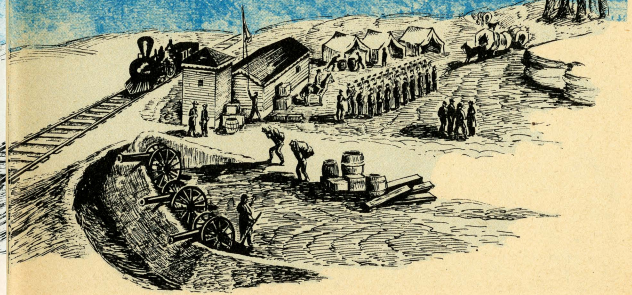
Trouble-Shooting Commercial-Type Vehicles 2
How to Check M48 Tank Control Linkage 12
It's Your Life, Bud (Cartoon Section) 21
Trailer Maintenance Services 29
How to Use Wheel Wrench Set 34
Lubing in the Tropics (Engineers) 38

DEPARTMENTS

Connie Rodd 17
Half-Mast 29
Armament 36
Engineers 38
Nike Notes 40
Contributions 46

PS wants your ideas and contributions, and is glad to answer your questions. Just write to: **Sgt Half-Mast, PS, Raritan Arsenal, Metuchen, New Jersey.** Names and addresses are kept in confidence.

The printing of this publication has been approved by the Director of the Bureau of the Budget (4 Aug 1953). DISTRIBUTION: Active Army: Gen Staff, DA (1) except DCSPER (2); SS, DA (1); Tec Svc, DA (5) except COFENGR (75), COFORD (275); Admin & Tec Svc Bd (5); Hq CONARC (10); OS Maj Comd (5); OS Base Comd (3); MDW (5); Armies (30); Corps (3); Div (2) except Armd Div (10); Brig (3); Reg't/Gp (3); Bn (5); CO (18) except Cml Co (8), Med Co (8), QM Co (8); Fl & Cp (8); Gen & Br Svc Sch (5) except Engr Sch (100), Ord Sch (25); USMA (25); Joint Sch (5); Specialist Sch (5); PMST (3) except PMST Ord ROTC Units (25); Gen Depots (5); Sup Soc, Gen Depots (5); Depots (5); AH (5); US Army Tng Cen (50); POE (OS) (3); Trans Terminal Comd (3); Army Terminal (3); OS Sup Agencies (2); PG (5); Arsenals (25); DB (25); Cruit Main Sta (3); Div Engr (2); Dist Engr (20). NG: State AG Special List. USAR: Mil Dist Special List. For explanation of abbreviations used see SR 320-50-1.



PS—THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 47 1956 Series

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limitations of availability, older issues may be obtained direct from Preventive Maintenance Agency, Raritan Arsenal, Metuchen, New Jersey.

IN THIS ISSUE

FEATURE ARTICLES

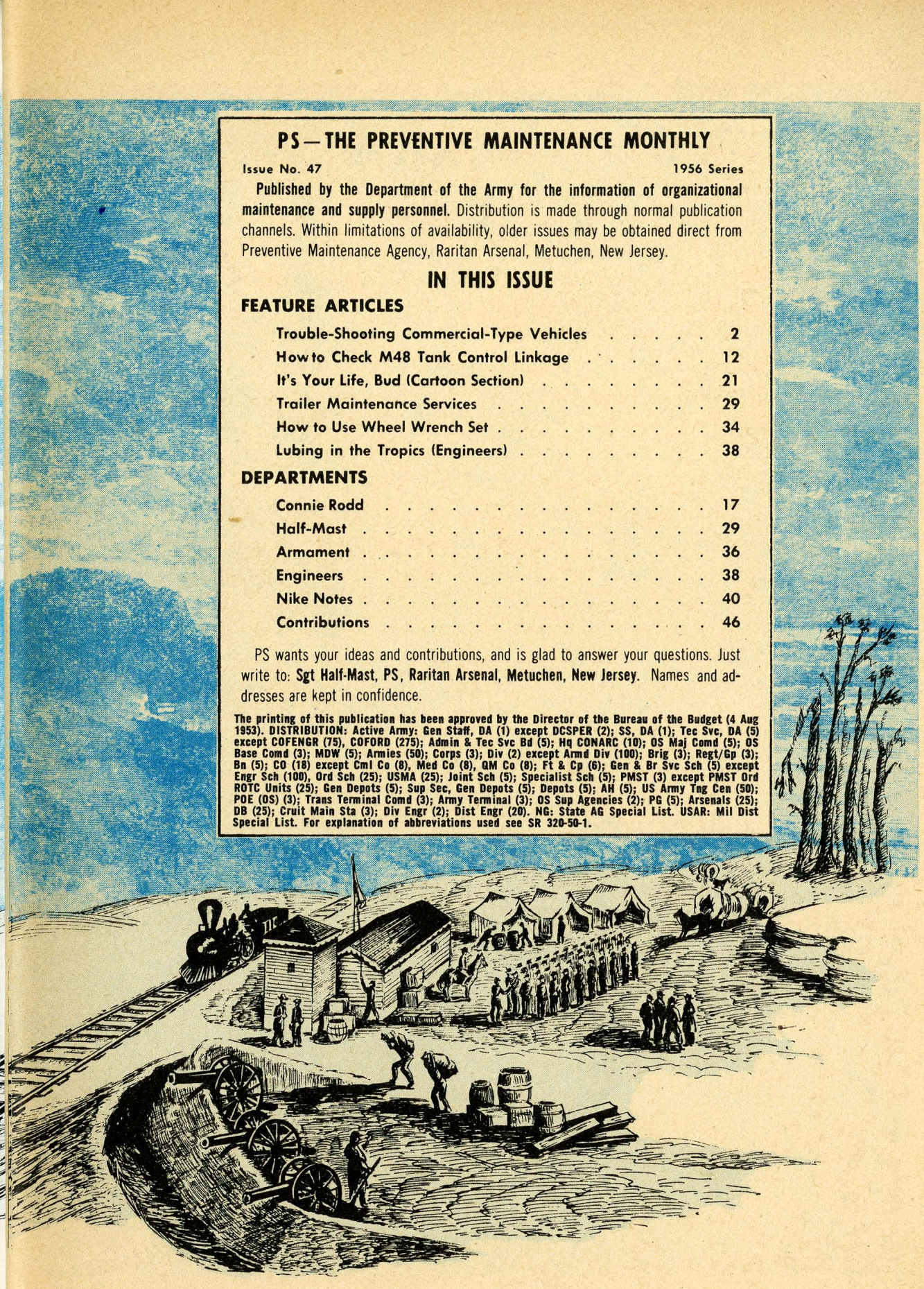
Trouble-Shooting Commercial-Type Vehicles 2
How to Check M48 Tank Control Linkage 12
It's Your Life, Bud (Cartoon Section) 21
Trailer Maintenance Services 29
How to Use Wheel Wrench Set 34
Lubing in the Tropics (Engineers) 38

DEPARTMENTS

Connie Rodd 17
Half-Mast 29
Armament 36
Engineers 38
Nike Notes 40
Contributions 46

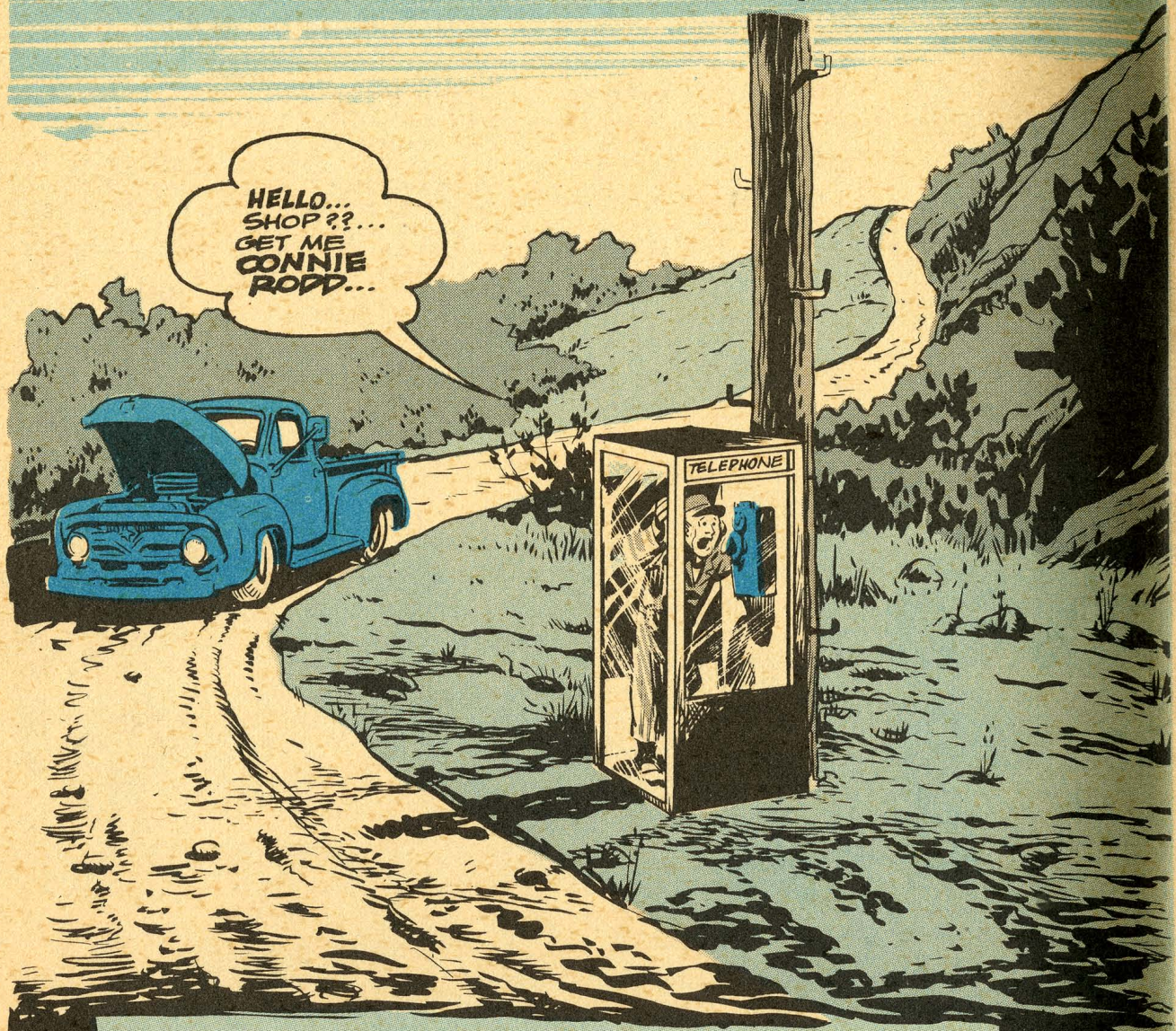
PS wants your ideas and contributions, and is glad to answer your questions. Just write to: **Sgt Half-Mast, PS, Raritan Arsenal, Metuchen, New Jersey.** Names and addresses are kept in confidence.

The printing of this publication has been approved by the Director of the Bureau of the Budget (4 Aug 1953). DISTRIBUTION: Active Army: Gen Staff, DA (1) except DCSPER (2); SS, DA (1); Tec Svc, DA (5) except COFENGR (75), COFORD (275); Admin & Tec Svc Bd (5); Hq CONARC (10); OS Maj Comd (5); OS Base Comd (3); MDW (5); Armies (50); Corps (3); Div (2) except Armd Div (100); Brig (3); Regt/Gp (3); Bn (5); CO (18) except Cml Co (8), Med Co (8), QM Co (8); Ft & Cp (6); Gen & Br Svc Sch (5) except Engr Sch (100), Ord Sch (25); USMA (25); Joint Sch (5); Specialist Sch (5); PMST (3) except PMST Ord ROTC Units (25); Gen Depots (5); Sup Sec, Gen Depots (5); Depots (5); AH (5); US Army Tng Cen (50); POE (OS) (3); Trans Terminal Comd (3); Army Terminal (3); OS Sup Agencies (2); PG (5); Arsenals (25); DB (25); Cruit Main Sta (3); Div Engr (2); Dist Engr (20). NG: State AG Special List. USAR: Mil Dist Special List. For explanation of abbreviations used see SR 320-50-1.



Here are some tricks for the TOE units which have commercial-type vehicles

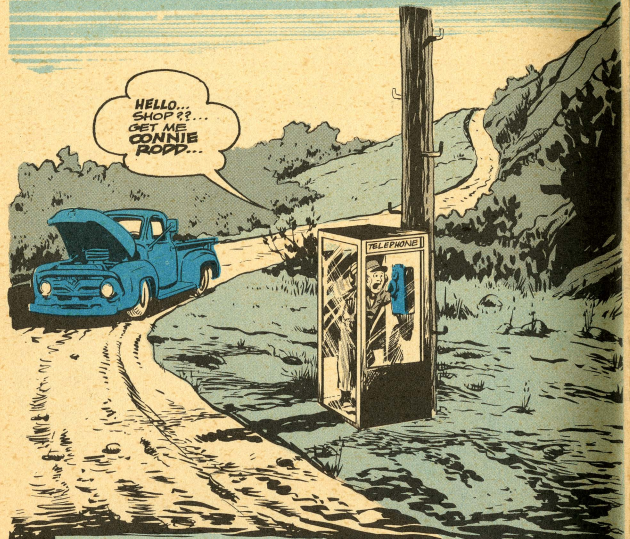
Trouble-Shooting Commercial-Type Vehicles



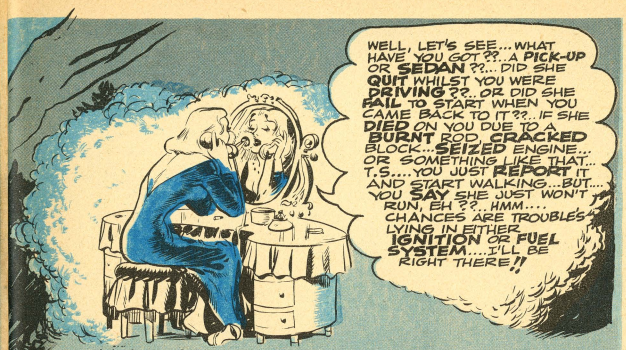
When that commercial-type vehicle of yours flubs out and you start wondering what you can do to get the thing started again, don't despair. All you need in most cases is a screwdriver, pliers and a few end wrenches plus a little know-how. If you, as the driver, don't have the tools or know-how to do the job, get help—your second echelon mechanic is always available.

Here are some tricks for the TOE units which have commercial-type vehicles

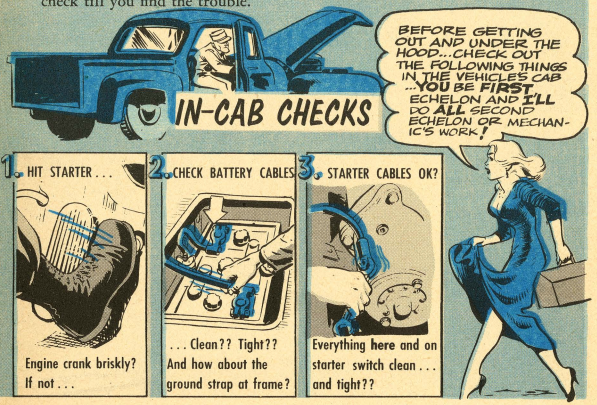
Trouble-Shooting Commercial-Type Vehicles

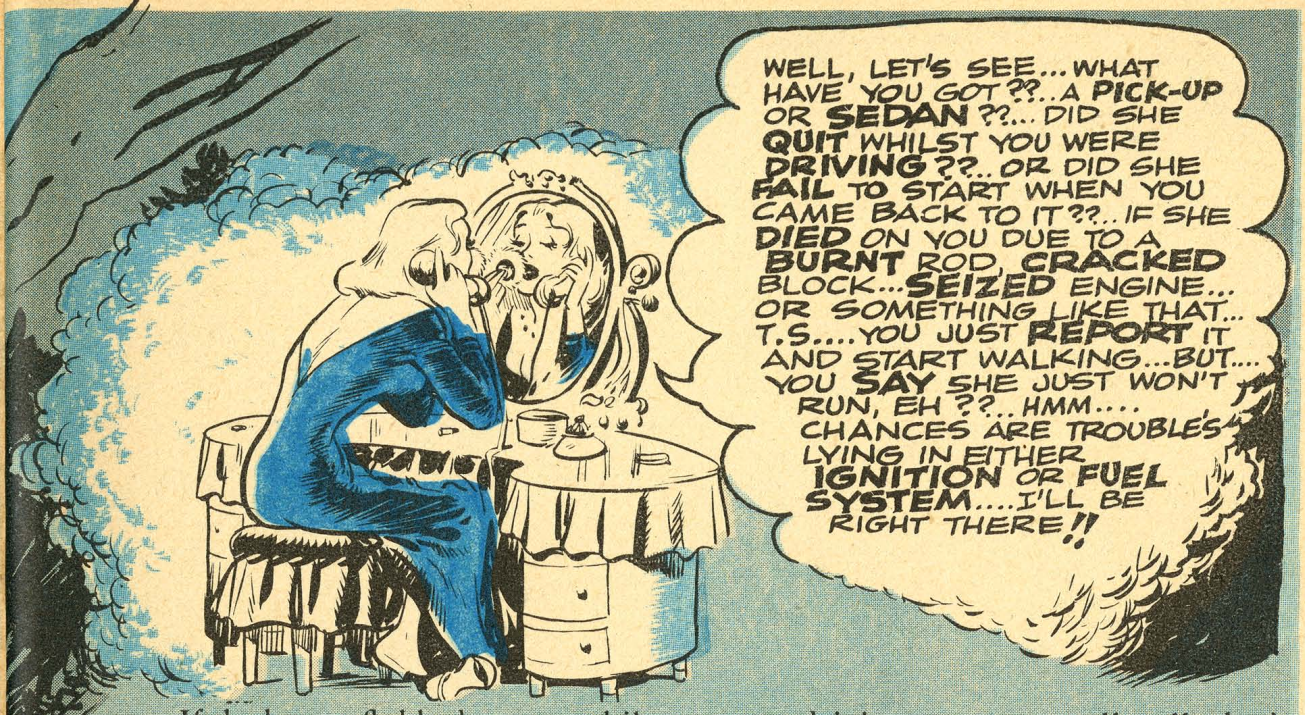


When that commercial-type vehicle of yours flubs out and you start wondering what you can do to get the thing started again, don't despair. All you need in most cases is a screwdriver, pliers and a few end wrenches plus a little know-how. If you, as the driver, don't have the tools or know-how to do the job, get help—your second echelon mechanic is always available.

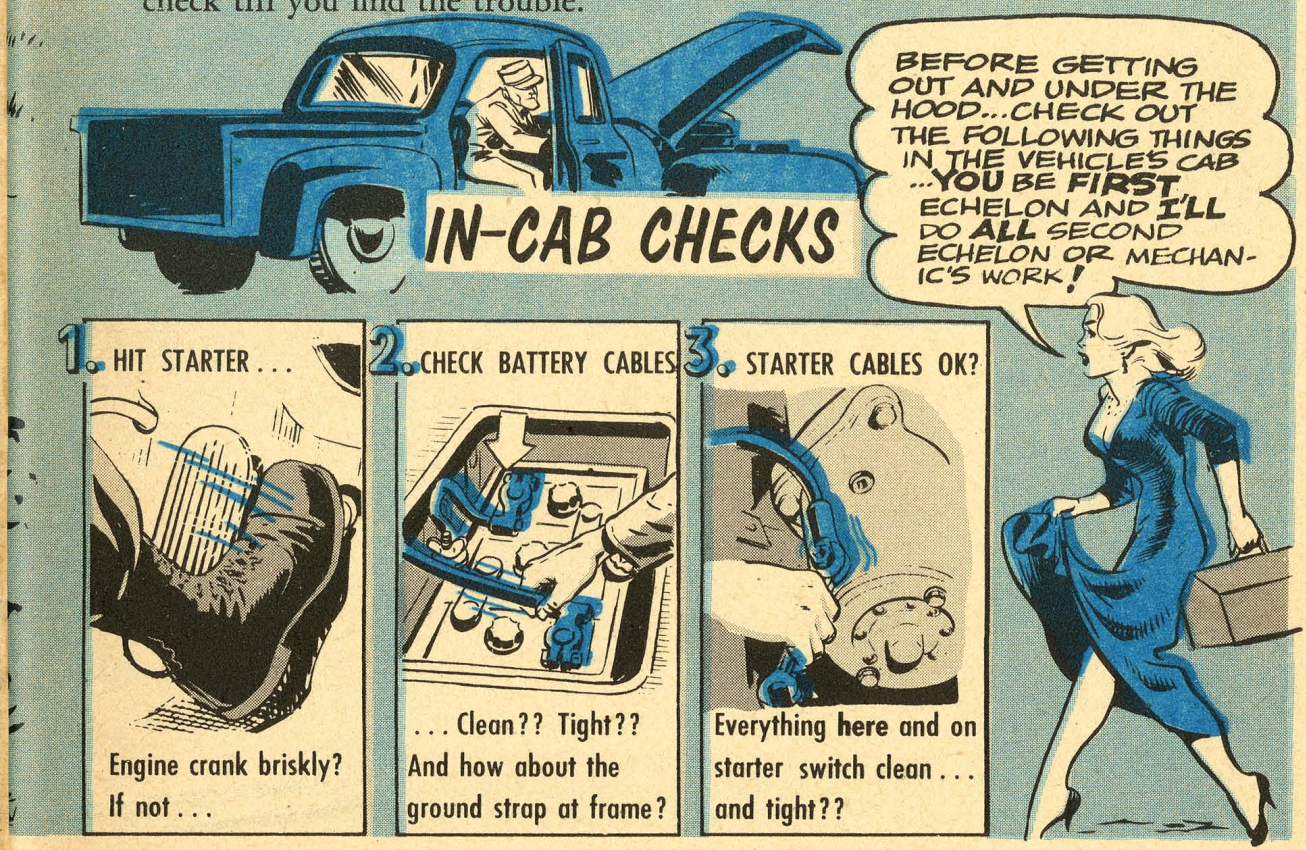


If the buggy flubbed on you while you were driving, you can usually tell what's wrong by the way she cut out—the sputtering, jerky stop of a fuel failure will sound and feel different than the complete quit of an ignition failure. But, if you come back to her after a halt, there's no way of telling, and you'll have to check till you find the trouble.



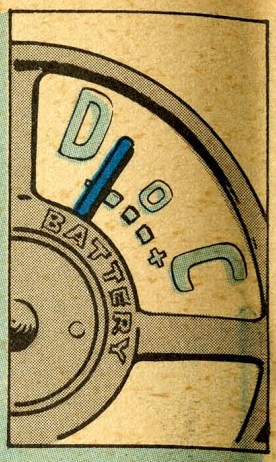


If the buggy flubbed on you while you were driving, you can usually tell what's wrong by the way she cut out—the sputtering, jerky stop of a fuel failure will sound and feel different than the complete quit of an ignition failure. But, if you come back to her after a halt, there's no way of telling, and you'll have to check till you find the trouble.

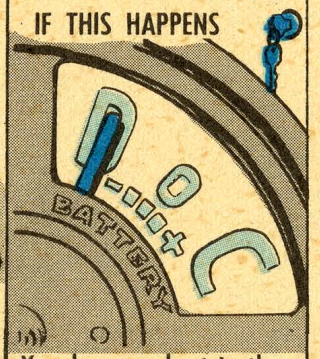


TALKING ABOUT CABLES...REMEMBER A BATTERY CABLE WITH LOTS OF BROKEN STRANDS MIGHT KEEP YOU RUNNING FINE BUT WON'T GIVE YOU ENOUGH JUCE FOR STARTING!

NOW TRY THE STARTER AGAIN... CRANK BETTER??? ...NO??...OKAY...TURN ON THE LIGHTS ...WATCH THE AMMETER... IF IT SHOWS DISCHARGE IT MEANS YOU'VE CURRENT RIGHT UP THROUGH THAT METER!

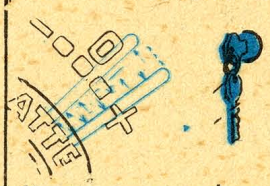


THEN TURN LIGHT OFF AND IGNITION ON... IF THIS HAPPENS



You have a short in the ignition primary circuit ... a slight bit of needle deflection or none at all (open points probably) means everything's jake...

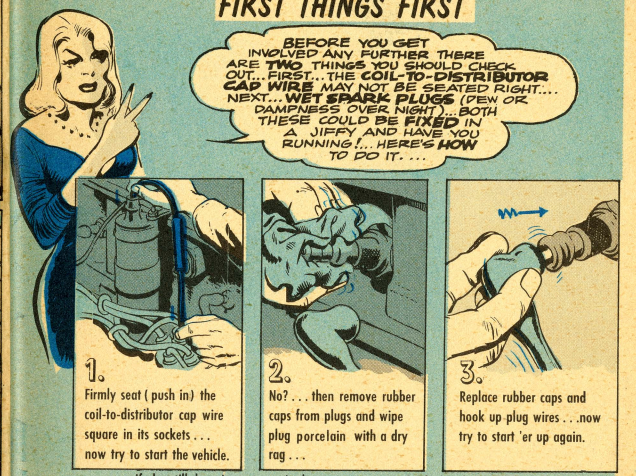
NOW, WITH THE IGNITION ON...HIT THE STARTER



Keep an eye on the ammeter needle... if you get a noticeable flicker while she's cranking, it means your ignition's primary's O.K. with the exception of the condenser. (We'll get to that later.) You'd better move on to the fuel system.

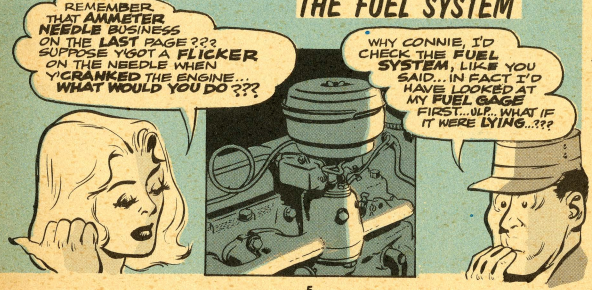
IF YOU DON'T GET A FLICKER THEN GO BACK AND START CHECKING THE IGNITION SYSTEM!

FIRST THINGS FIRST



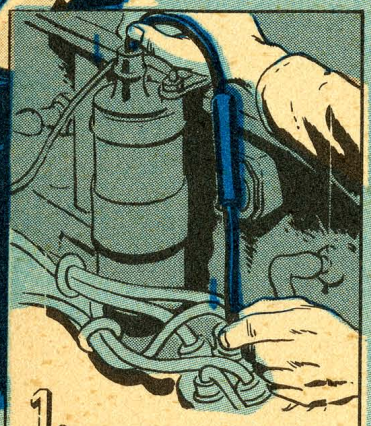
If she still doesn't start, now's the time to get into the fuel and ignition systems

THE FUEL SYSTEM

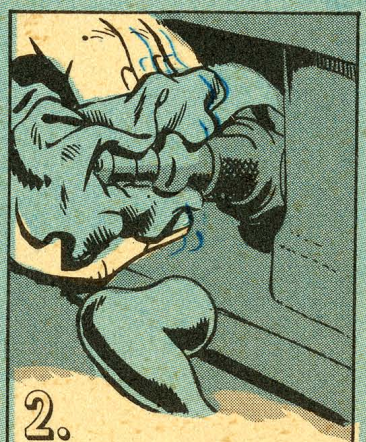


FIRST THINGS FIRST

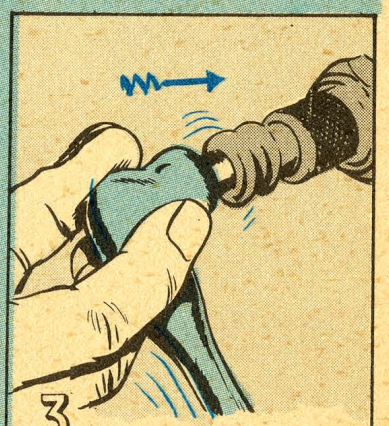
BEFORE YOU GET INVOLVED ANY FURTHER THERE ARE **TWO** THINGS YOU SHOULD CHECK OUT... FIRST... THE **COIL-TO-DISTRIBUTOR CAP WIRE** MAY NOT BE SEATED RIGHT.... NEXT... **WET SPARK PLUGS** (DEW OR DAMPNESS OVER NIGHT)... BOTH THESE COULD BE **FIXED** IN A JIFFY AND HAVE YOU RUNNING!... HERE'S **HOW** TO DO IT. ...



1. Firmly seat (push in) the coil-to-distributor cap wire square in its sockets . . . now try to start the vehicle.



2. No? . . . then remove rubber caps from plugs and wipe plug porcelain with a dry rag . . .

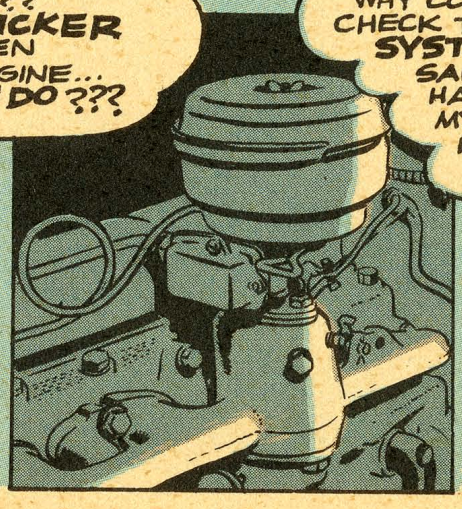


3. Replace rubber caps and hook up plug wires . . .now try to start 'er up again.

If she still doesn't start, now's the time to get into the fuel and ignition systems

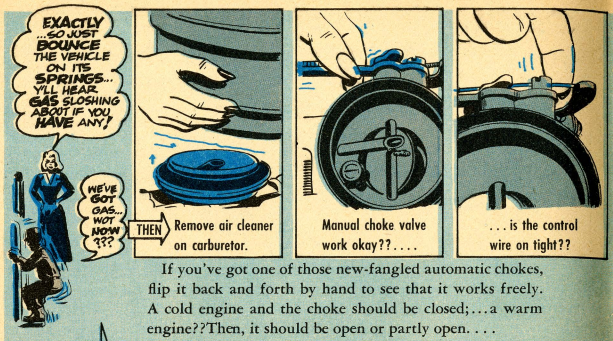
THE FUEL SYSTEM

REMEMBER THAT **AMMETER NEEDLE** BUSINESS ON THE **LAST** PAGE??? SUPPOSE Y'GOT A **FLICKER** ON THE NEEDLE WHEN Y'**CRANKED** THE ENGINE... **WHAT WOULD YOU DO ???**



WHY CONNIE, I'D CHECK THE **FUEL SYSTEM**, LIKE YOU SAID... IN FACT I'D HAVE LOOKED AT MY **FUEL GAGE** FIRST... ULP... WHAT IF IT WERE **LYING**...???

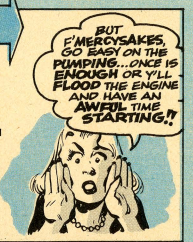
EXACTLY ...SO JUST BOUNCE THE VEHICLE ON ITS SPRINGS... Y'LL HEAR GAS SLOSHING ABOUT IF YOU HAVE ANY!
WE'VE GOT GAS... WOT NOW ???
THEN
Remove air cleaner on carburetor.
Manual choke valve work okay??....
... is the control wire on tight??
If you've got one of those new-fangled automatic chokes, flip it back and forth by hand to see that it works freely. A cold engine and the choke should be closed;...a warm engine??Then, it should be open or partly open....
NEXT
Open the choke and work the throttle... If you get a spit of gas going down into the manifold, y'r okay.
BUT F'MERCYSAKES, GO EASY ON THE PUMPING...ONCE IS ENOUGH OR Y'LL FLOOD THE ENGINE AND HAVE AN AWFUL TIME STARTING!!
NO SPIT?
AT THE 'CARB'-END DO THIS:
REMOVE CARBURETOR-FUEL PUMP LINE. WHILST YOUR BUDDY HITS STARTER WITH IGNITION OFF...
WATCH LINE'S END... GETTING GAS OKAY??
IF YOU'RE ALONE JUST WRAP A RAG AROUND HOSE END... GOOSE STARTER... COME BACK AND CHECK
If so, gas is getting to the carburetor..:. but apparently not through the accelerating pump. Chances are the carburetor inlet screen, if you have one, or the float valve is plugged up.



If you've got one of those new-fangled automatic chokes, flip it back and forth by hand to see that it works freely. A cold engine and the choke should be closed;...a warm engine??Then, it should be open or partly open....

NEXT

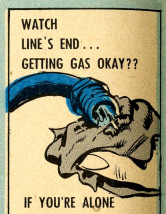
Open the choke and work the throttle... If you get a spit of gas going down into the manifold, y'r okay.



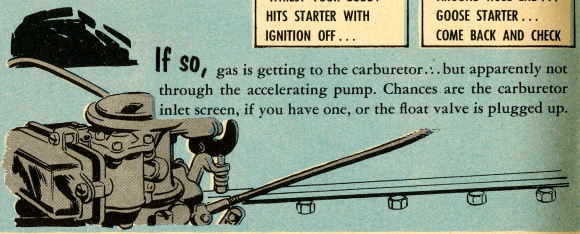
NO SPIT?

REMOVE CARBURETOR-FUEL PUMP LINE. WHILST YOUR BUDDY HITS STARTER WITH IGNITION OFF...

WATCH LINE'S END... GETTING GAS OKAY??

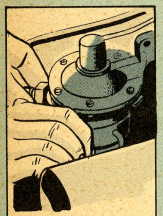


IF YOU'RE ALONE JUST WRAP A RAG AROUND HOSE END... GOOSE STARTER... COME BACK AND CHECK

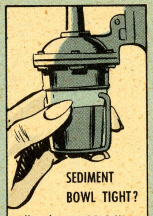


If so, gas is getting to the carburetor...but apparently not through the accelerating pump. Chances are the carburetor inlet screen, if you have one, or the float valve is plugged up.

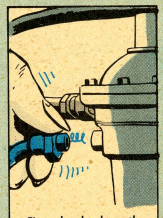
SUPPOSE YOU DON'T GET GAS AT THE CARBURETOR



Maybe your system's been sucking nothin' but air thru a loose connection... check up!! Hose connections tight at fuel pump and gas tank??...



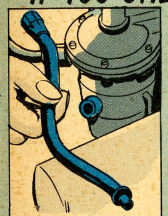
All tight now?? O.K. Crank the engine... if gas **still** doesn't squirt from disconnected line at the carburetor... go to the fuel pump...



First, tho, hook up the line at the carburetor and unhook the gas tank line at the pump ... (if y'r alone wrap line in a rag)

IF... you get gas at the pump there's no doubt... the fuel pump is on the fritz.

IF YOU STILL DON'T GET GAS...



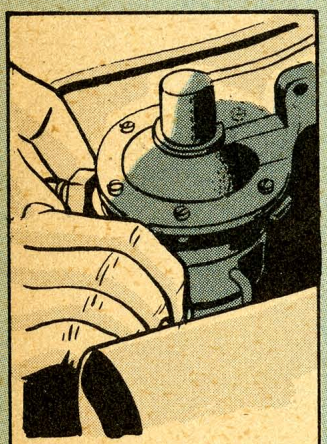
Remove flexible line that connects fuel pump to fixed line on chassis.

Test the hose for an air leak which may be keeping your pump from drawing gas.

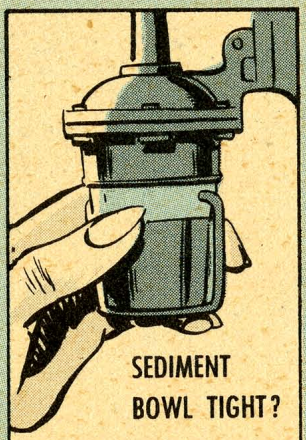
Line okay? You should now have a good flow... if not your fuel pump is on the fritz... and there's nothing to do but get a new one...

If your vehicle still doesn't start... and if you know your fuel pump's okay...you can bet your fuel system's okay, too....Your next step is the ignition system.

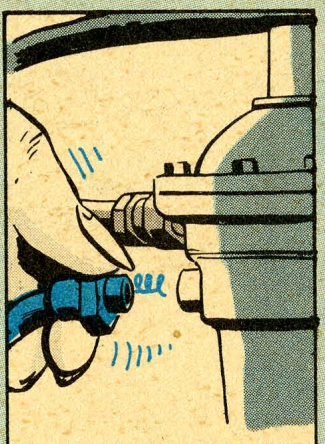
SUPPOSE YOU DON'T GET GAS AT THE CARBURETOR



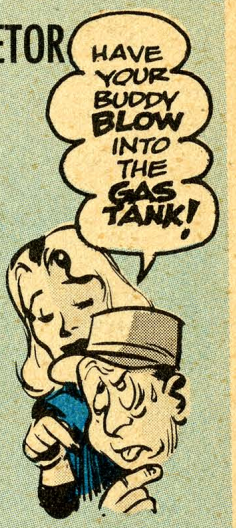
Maybe your system's been sucking nothin' but air thru a loose connection . . . check up!! Hose connections tight at fuel pump and gas tank??. . .



All tight now?? O.K. Crank the engine . . . if gas **still** doesn't squirt from disconnected line at the carburetor . . . go to the fuel pump . . .

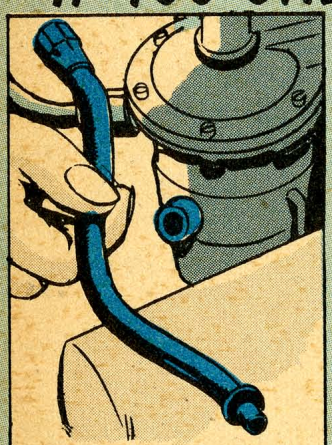


First, tho, hook up the line at the carburetor and unhook the gas tank line at the pump . . . (if y'r alone wrap line in a rag)



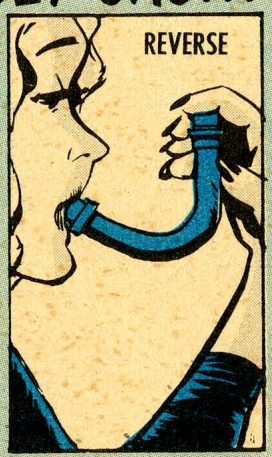
IF . . . you get gas at the pump there's no doubt . . . the fuel pump is on the fritz.

IF YOU STILL DON'T GET GAS...



Remove flexible line that connects fuel pump to fixed line on chassis.

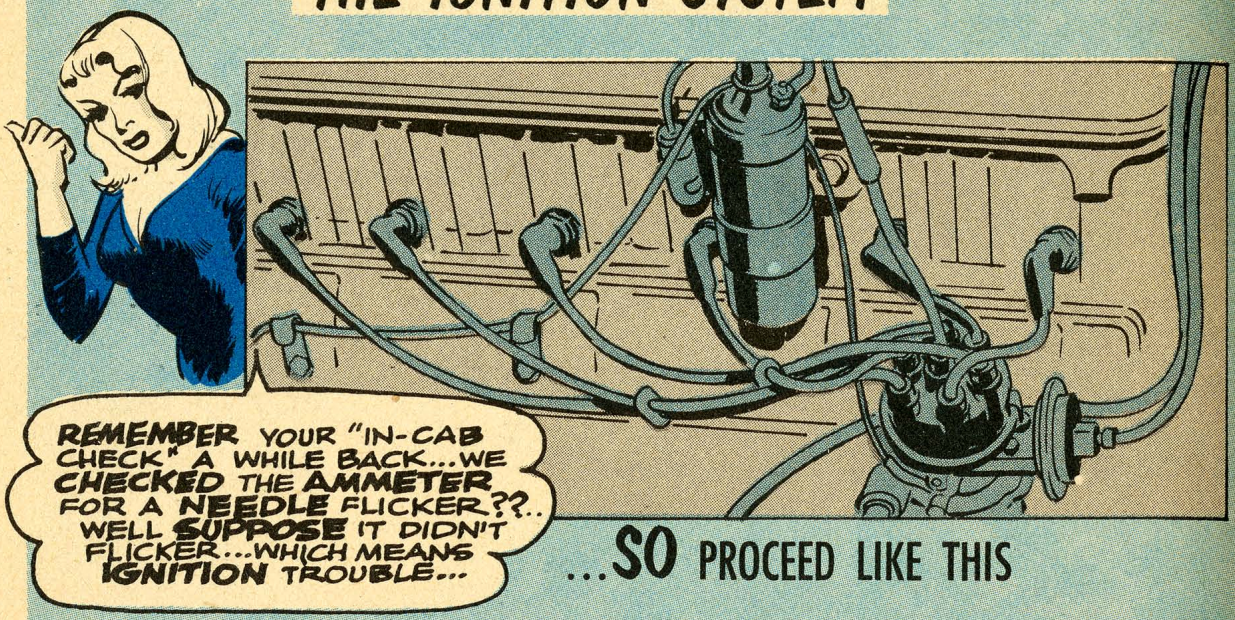
Test the hose for an air leak which may be keeping your pump from drawing gas.



Line okay? You should now have a good flow . . . if not your fuel pump is on the fritz . . . and there's nothing to do but get a new one . . .

If your vehicle still doesn't start . . . and if you know your fuel pump's okay . . . you can bet your fuel system's okay, too. . . . Your next step is the ignition system.

THE IGNITION SYSTEM

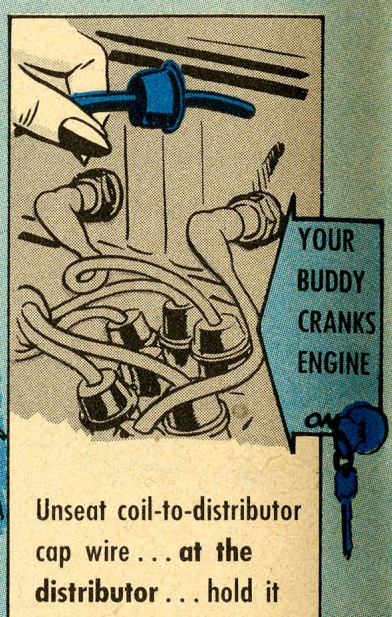


...SO PROCEED LIKE THIS

Pull spark plug wire and hold it about 1/4 inch from block . . . Spark? Okay, then your ignition system is fine . . .

. . . Besides if a few plugs did blow you'd only get a "miss"... this is a matter of simple odds . . .

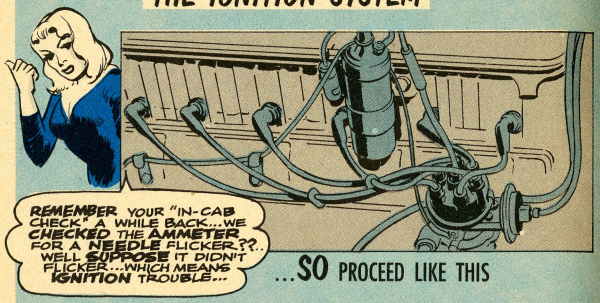
BUT IF YOU GET NO SPARK



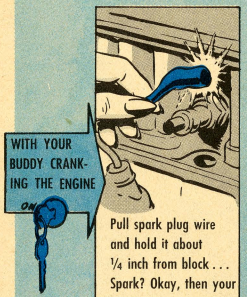
Unseat coil-to-distributor cap wire . . . **at the distributor** . . . hold it about 1/4 inch from block . . .

If you get a spark from your coil-to-distributor cap wire and no spark from your plug wire, chances are your rotor's lousing up or something's wrong with the distributor cap . . . maybe cracked or pitted.

THE IGNITION SYSTEM



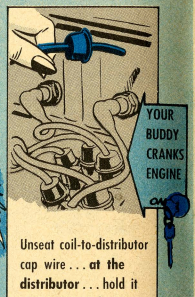
...SO PROCEED LIKE THIS



Pull spark plug wire and hold it about ¼ inch from block... Spark? Okay, then your ignition system is fine...

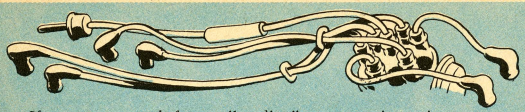
...Besides if a few plugs did blow you'd only get a "miss"... this is a matter of simple odds...

BUT IF YOU GET NO SPARK

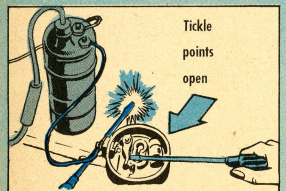


Unseat coil-to-distributor cap wire... **at the distributor**... hold it about ¼ inch from block...

If you get a spark from your coil-to-distributor cap wire and no spark from your plug wire, chances are your rotor's lousing up or something's wrong with the distributor cap... maybe cracked or pitted.

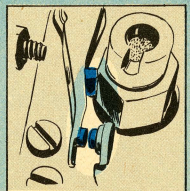


If you get **no** spark from coil-to-distributor cap wire... time to get in your distributor.



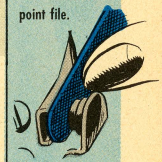
Short out coil-to-distributor wire (not the distributor cap wire) at the distributor.

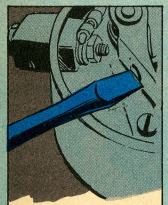
Get a spark? Then your trouble's probably right in your distributor.



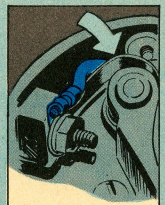
SO examine the points... tickle the starter until the high point on one of the cam lobes stops (under the fibre block).

Points are now wide open... are they dirty, pitted or burned? ...Try cleaning them like this with a distributor point file.

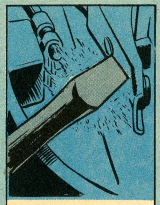




NOW... see if you get a spark when you ground the moving ignition point... **No spark??**

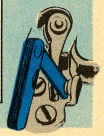


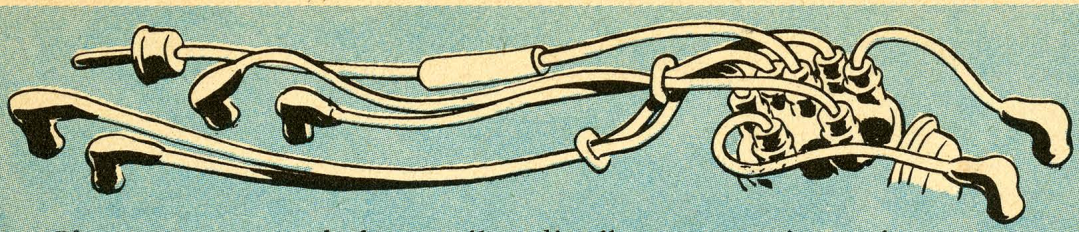
How about the little pigtail that attaches to the point inside the distributor's primary terminal?... Tight?



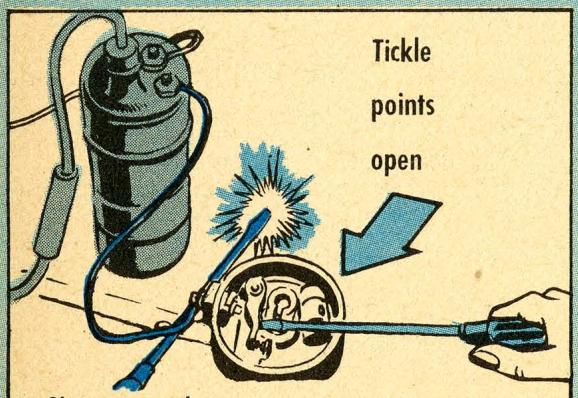
BUT... suppose you did get a spark at the moving ignition point...!! Gap 'em to .020 inch.

A feeler gage is what you need.



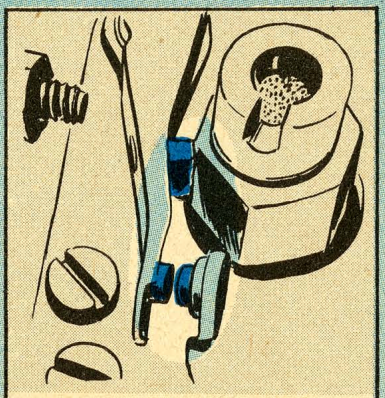


If you get **no** spark from coil-to-distributor cap wire . . . time to get in your distributor.



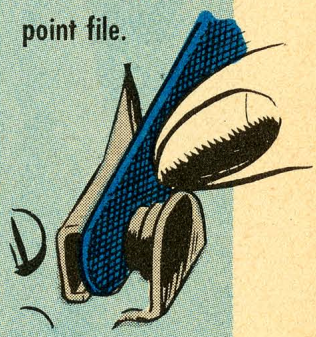
Short out coil-to-distributor wire (not the distributor cap wire) at the distributor.

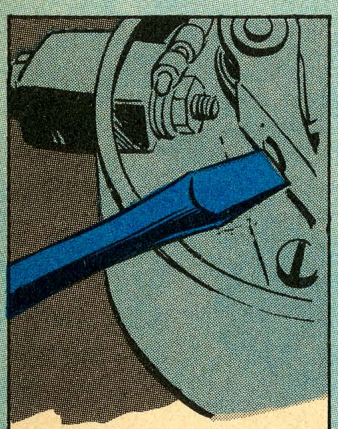
Get a spark? Then your trouble's probably right in your distributor.



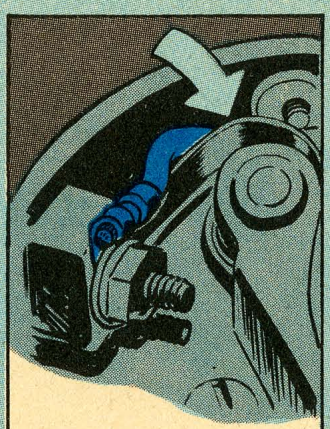
SO examine the points . . . tickle the starter until the high point on one of the cam lobes stops (under the fibre block).

Points are now wide open . . . are they dirty, pitted or burned? . . . Try cleaning them like this with a distributor point file.

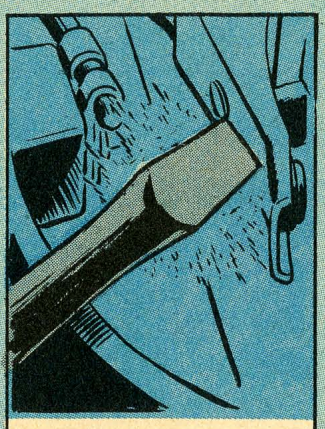




NOW . . . see if you get a spark when you ground the moving ignition point . . . **No spark??**

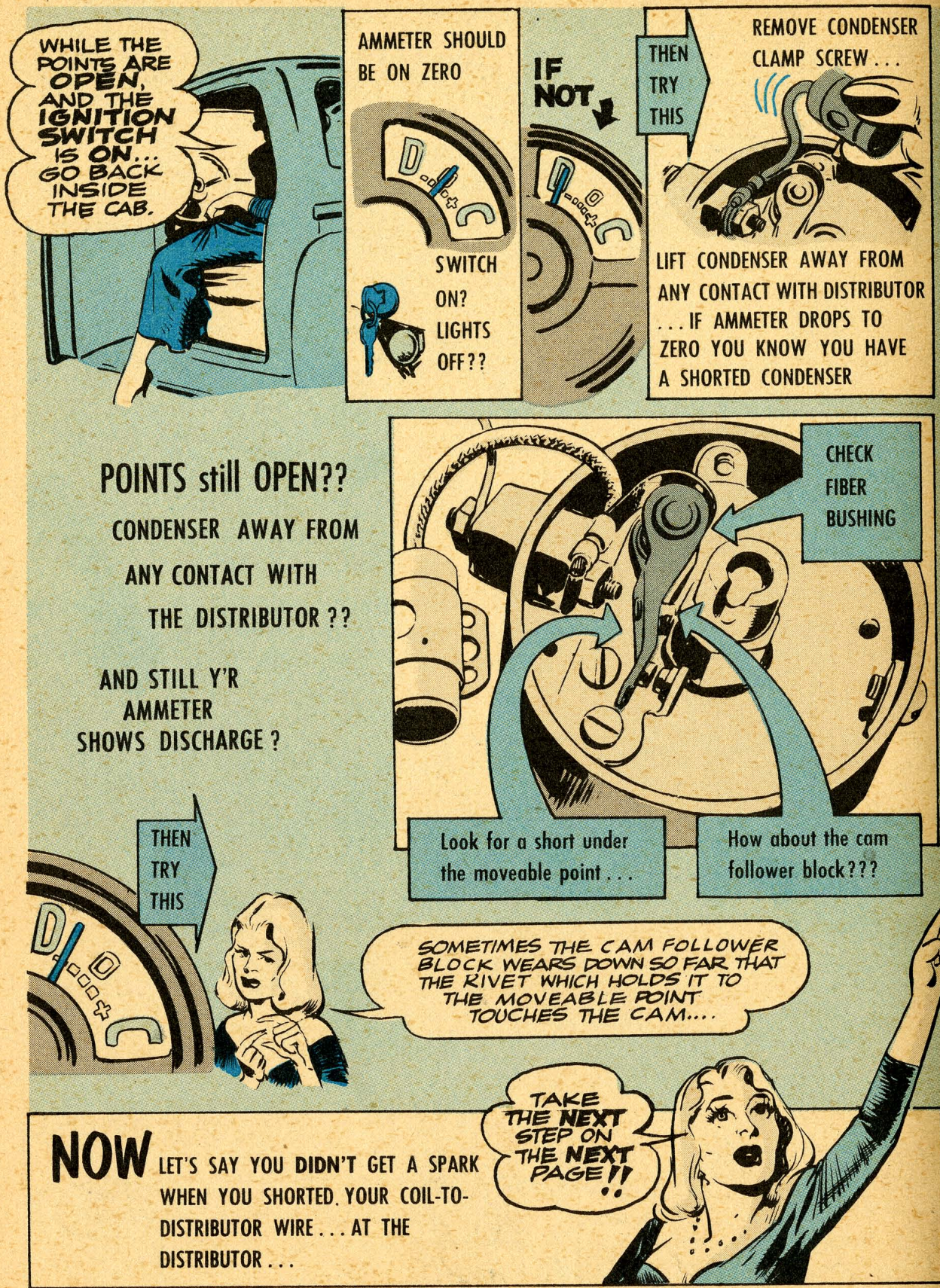


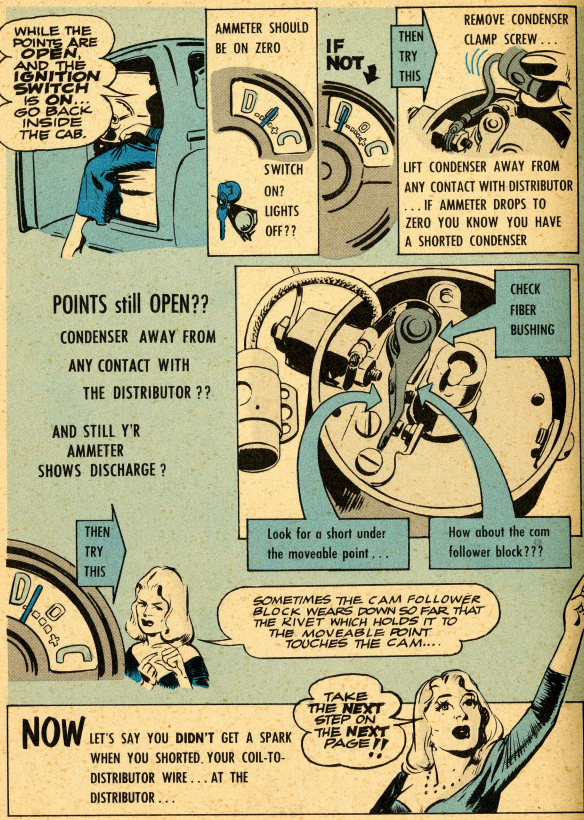
How about the little pigtail that attaches to the point inside the distributor's primary terminal? . . . Tight?

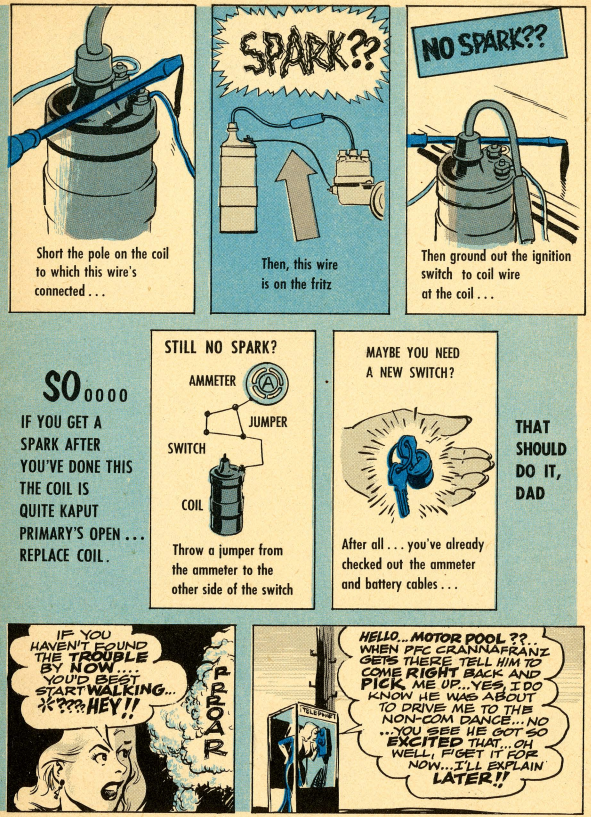


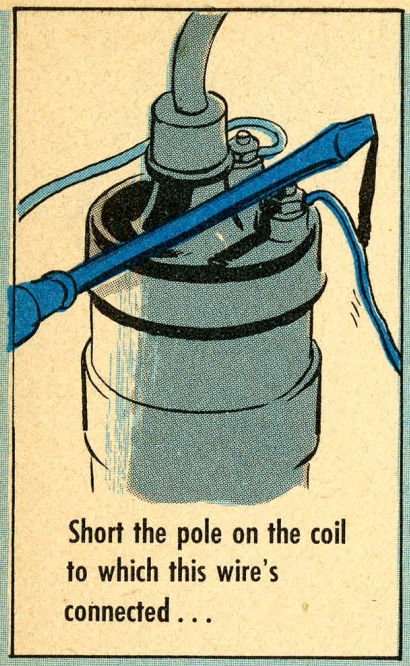
BUT . . . suppose you did get a spark at the moving ignition point . . . ! ! Gap 'em to .020 inch.

A feeler gage is what you need.

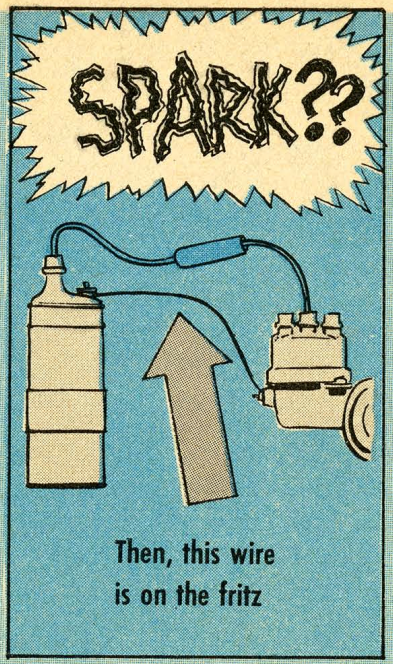

WHILE THE POINTS ARE OPEN, AND THE IGNITION SWITCH IS ON... GO BACK INSIDE THE CAB.
AMMETER SHOULD BE ON ZERO
SWITCH ON? LIGHTS OFF??
IF NOT
THEN TRY THIS
REMOVE CONDENSER CLAMP SCREW...
LIFT CONDENSER AWAY FROM ANY CONTACT WITH DISTRIBUTOR ... IF AMMETER DROPS TO ZERO YOU KNOW YOU HAVE A SHORTED CONDENSER
POINTS still OPEN??
CONDENSER AWAY FROM ANY CONTACT WITH THE DISTRIBUTOR ??
AND STILL Y'R AMMETER SHOWS DISCHARGE ?
CHECK FIBER BUSHING
Look for a short under the moveable point . . .
How about the cam follower block???
THEN TRY THIS
SOMETIMES THE CAM FOLLOWER BLOCK WEARS DOWN SO FAR THAT THE RIVET WHICH HOLDS IT TO THE MOVEABLE POINT TOUCHES THE CAM....
TAKE THE NEXT STEP ON THE NEXT PAGE!!
NOW LET'S SAY YOU DIDN'T GET A SPARK WHEN YOU SHORTED. YOUR COIL-TO-DISTRIBUTOR WIRE . . . AT THE DISTRIBUTOR . . .


WHILE THE POINTS ARE OPEN, AND THE IGNITION SWITCH IS ON... GO BACK INSIDE THE CAB.
AMMETER SHOULD BE ON ZERO
SWITCH ON? LIGHTS OFF??
IF NOT
THEN TRY THIS
REMOVE CONDENSER CLAMP SCREW...
LIFT CONDENSER AWAY FROM ANY CONTACT WITH DISTRIBUTOR ... IF AMMETER DROPS TO ZERO YOU KNOW YOU HAVE A SHORTED CONDENSER
POINTS still OPEN??
CONDENSER AWAY FROM ANY CONTACT WITH THE DISTRIBUTOR ??
AND STILL Y'R AMMETER SHOWS DISCHARGE ?
CHECK FIBER BUSHING
Look for a short under the moveable point...
How about the cam follower block???
THEN TRY THIS
SOMETIMES THE CAM FOLLOWER BLOCK WEARS DOWN SO FAR THAT THE RIVET WHICH HOLDS IT TO THE MOVEABLE POINT TOUCHES THE CAM....
NOW LET'S SAY YOU DIDN'T GET A SPARK WHEN YOU SHORTED YOUR COIL-TO-DISTRIBUTOR WIRE... AT THE DISTRIBUTOR...
TAKE THE NEXT STEP ON THE NEXT PAGE!!

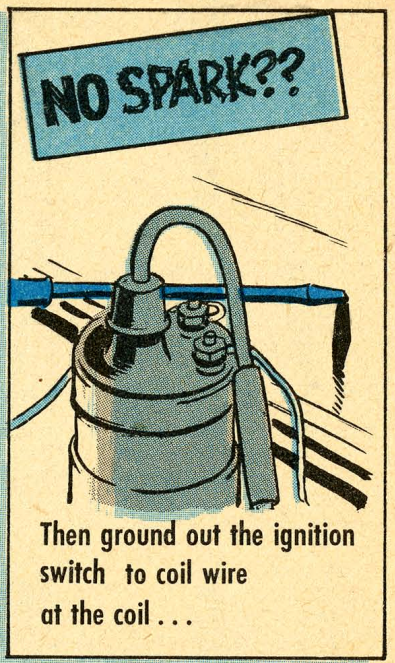

Short the pole on the coil to which this wire's connected...
SPARK??
Then, this wire is on the fritz
NO SPARK??
Then ground out the ignition switch to coil wire at the coil...
SOoooo
IF YOU GET A SPARK AFTER YOU'VE DONE THIS THE COIL IS QUITE KAPUT PRIMARY'S OPEN... REPLACE COIL.
STILL NO SPARK?
AMMETER
JUMPER
SWITCH
COIL
Throw a jumper from the ammeter to the other side of the switch
MAYBE YOU NEED A NEW SWITCH?
After all... you've already checked out the ammeter and battery cables...
THAT SHOULD DO IT, DAD
IF YOU HAVEN'T FOUND THE TROUBLE BY NOW.... YOU'D BEST START WALKING... *???HEY!!
RRROAR
HELLO... MOTOR POOL ??.. WHEN PFC CRANNAFRANZ GETS THERE TELL HIM TO COME RIGHT BACK AND PICK ME UP...YES, I DO KNOW HE WAS ABOUT TO DRIVE ME TO THE NON-COM DANCE...NO ...YOU SEE HE GOT SO EXCITED THAT...OH WELL, I'GET IT FOR NOW...I'LL EXPLAIN LATER!!



Short the pole on the coil to which this wire's connected . . .



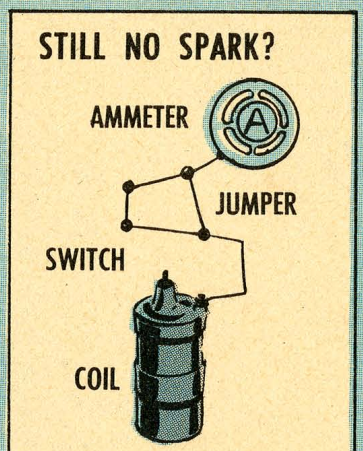
Then, this wire is on the fritz



Then ground out the ignition switch to coil wire at the coil . . .

SOoooo

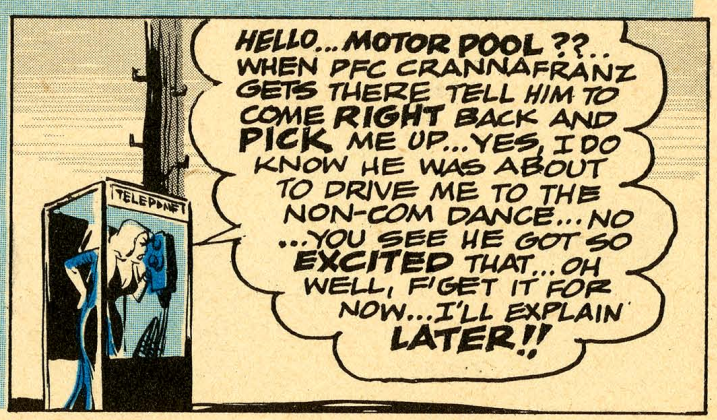
IF YOU GET A SPARK AFTER YOU'VE DONE THIS THE COIL IS QUITE KAPUT PRIMARY'S OPEN . . . REPLACE COIL.



Throw a jumper from the ammeter to the other side of the switch

After all . . . you've already checked out the ammeter and battery cables . . .

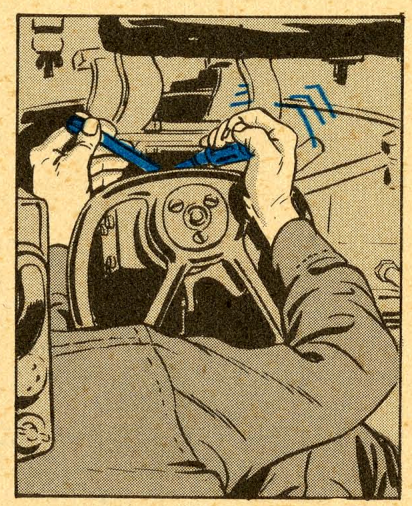
THAT SHOULD DO IT, DAD



CONTROL

Some time you may be all hot to go in your M48 tank (or your M48A1)... and find your shifting mechanism, stiff as a recruit at attention. This can mean trouble either in your driver's control assembly, or in the linkage, or both.

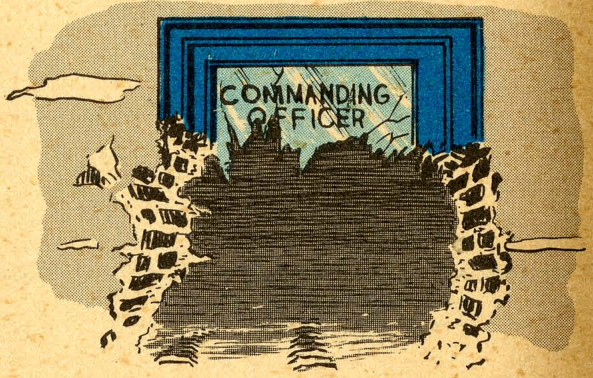
To find out which is what, you tank mechanics do this:



Disconnect the front shift linkage rod from the driver's control assembly; then try to move the shift lever through all the shift positions.

If the lever won't hit some of the holes, or if you feel a grinding, or anything obviously fouled up—the control assembly has shot its pin and must be replaced... by Ordnance.

(Never try to make out with a bum shifting control. With this rascal on the blink, it's possible to have your shift lever in the NEUTRAL or NEUTRAL PARK slot when the transmission is really in LOW range. Then, should you fire up your engine with your brakes off —or, soon as you release your brakes— **surprise!** Y'can lose friends around a motor pool that way—but fast.)

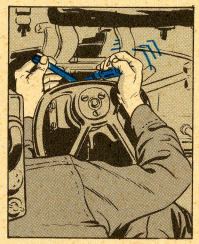


If the driver's shift lever works OK with the linkage disconnected, then you can conclude the trouble's in the linkage. So...

CONTROL

Some time you may be all hot to go in your M48 tank (or your M48A1)... and find your shifting mechanism stiff as a recruit at attention. This can mean trouble either in your driver's control assembly, or in the linkage, or both.

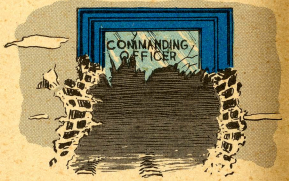
To find out which is what, you tank mechanics do this:



Disconnect the front shift linkage rod from the driver's control assembly; then try to move the shift lever through all the shift positions.

If the lever won't hit some of the holes, or if you feel a grinding, or anything obviously fouled up—the control assembly has shot its pin and must be replaced... by Ordnance.

(Never try to make out with a bum shifting control. With this rascal on the blink, it's possible to have your shift lever in the NEUTRAL or NEUTRAL PARK slot when the transmission is really in LOW range. Then, should you fire up your engine with your brakes off —or, soon as you release your brakes— **surprise**! Y'can lose friends around a motor pool that way—but fast.)

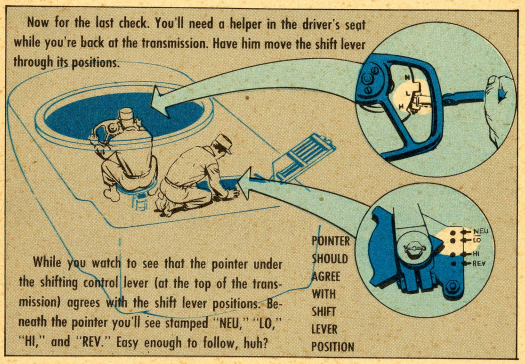


If the driver's shift lever works OK with the linkage disconnected, then you can conclude the trouble's in the linkage. So...

LINKAGE

First, check along the hull floor to see if anything's jamming the rods. (**You** keep your bilges clean, of course... NATCH... but **somebody** could've goofed.) In cold weather ice could be the culprit. Remedy: melt the ice, drain the hull, clean out all the junk, and squirt some engine oil on the linkage bearings.

Still stiff? Check out those control rods for bends—particularly the rear rods, at the transmission. (Seems some chowder-heads like to walk all over their rods when checking a transmission or pulling a power pack.) Straighten any rods y'find with bends they shouldn't have; some rods should have bends, of course, but they're all obvious enough.



And—while you're at it—check out the steering. When your steering wheel is centered, the pointer under the steering control lever at the top of the transmission should be on the center mark. OK?

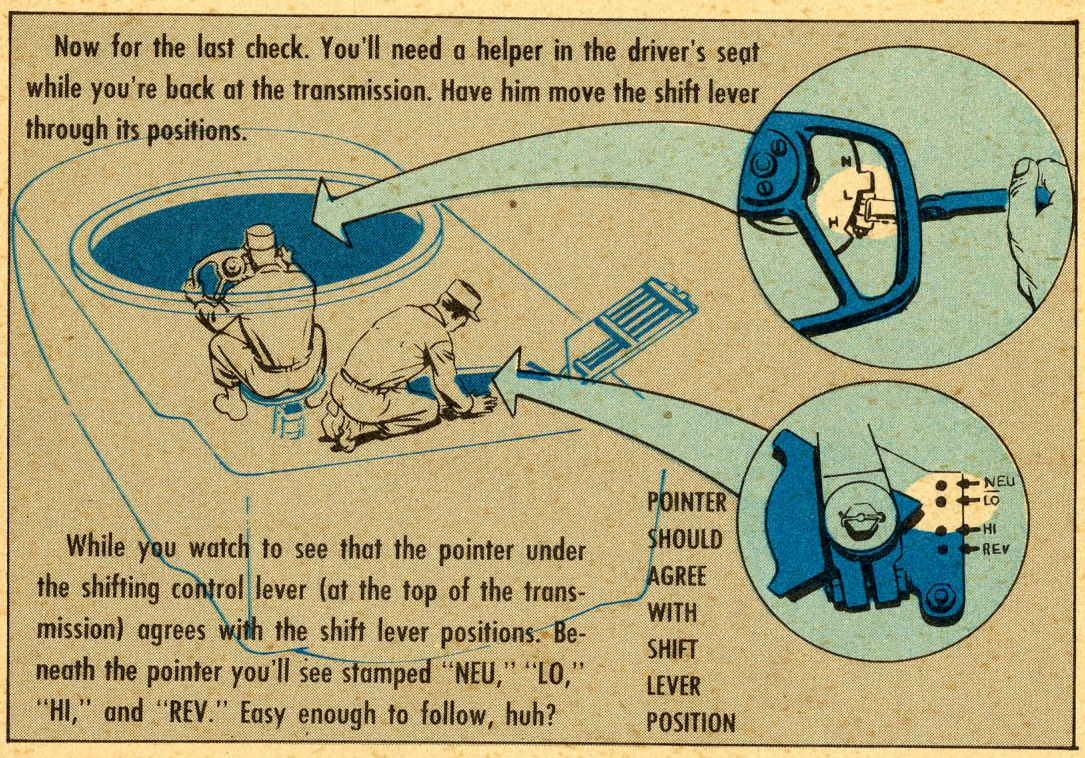
If either the shifting or steering pointers on the transmission fail to follow the driver's controls, you'll want to adjust the linkage—at the rear.

LIKE IT SHOWS ON THE NEXT PAGE

LINKAGE

First, check along the hull floor to see if anything's jamming the rods. (You keep your bilges clean, of course... NATCH... but **somebody** could've goofed.) In cold weather ice could be the culprit. Remedy: melt the ice, drain the hull, clean out all the junk, and squirt some engine oil on the linkage bearings.

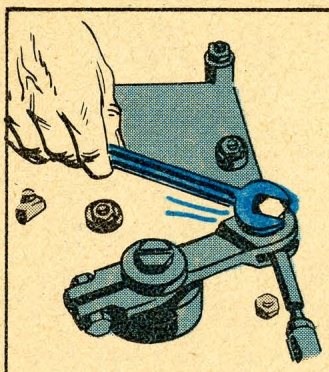
Still stiff? Check out those control rods for bends—particularly the rear rods, at the transmission. (Seems some chowder-heads like to walk all over their rods when checking a transmission or pulling a power pack.) Straighten any rods y'find with bends they shouldn't have; some rods should have bends, of course, but they're all obvious enough.



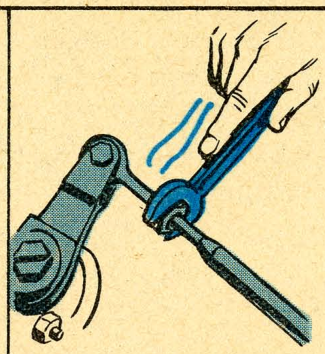
And—while you're at it—check out the steering. When your steering wheel is centered, the pointer under the steering control lever at the top of the transmission should be on the center mark. OK?

If either the shifting or steering pointers on the transmission fail to follow the driver's controls, you'll want to adjust the linkage—at the rear.

LIKE IT SHOWS ON THE NEXT PAGE

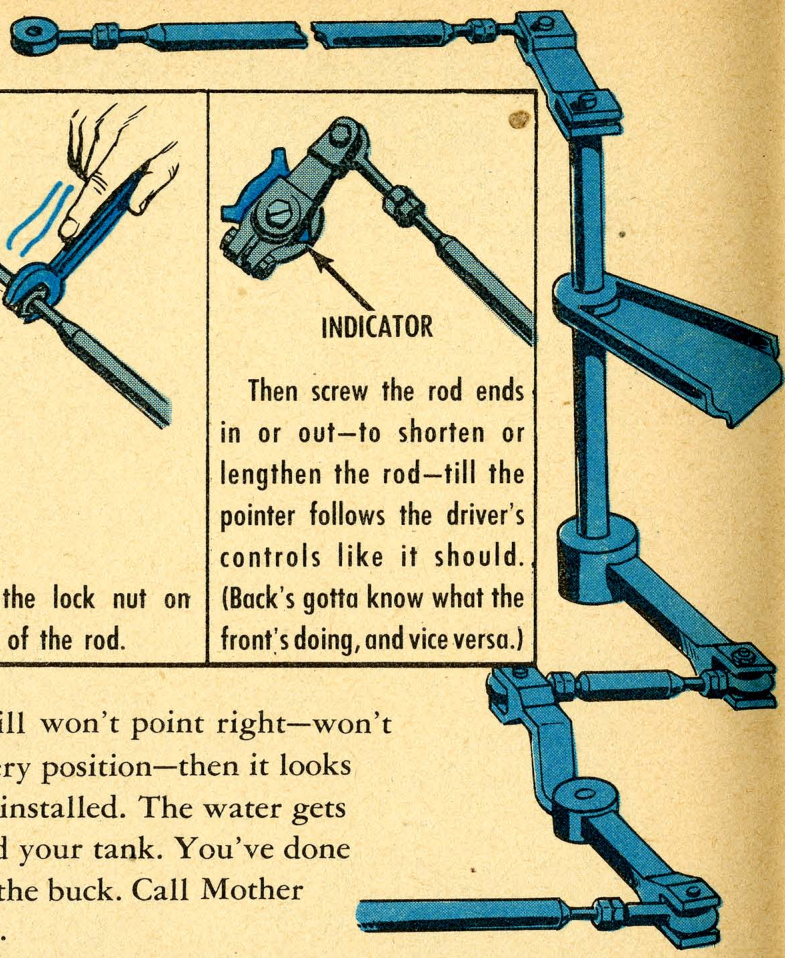


Disconnect the rear rod—of whichever linkage is not right—from the control lever at the transmission.

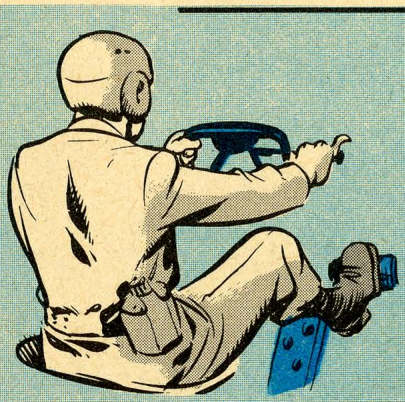


Loosen the lock nut on either end of the rod.

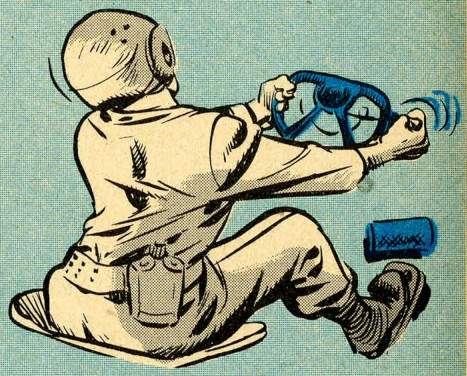
Then screw the rod ends in or out—to shorten or lengthen the rod—till the pointer follows the driver's controls like it should. (Back's gotta know what the front's doing, and vice versa.)



If, after all this, the pointer still won't point right—won't hit 'er right on the button in every position—then it looks like your linkage's not properly installed. The water gets deep here—so don't try to rebuild your tank. You've done all you can, and it's time to pass the buck. Call Mother Ordnance and tell 'er what hurts.



Frayed Collar



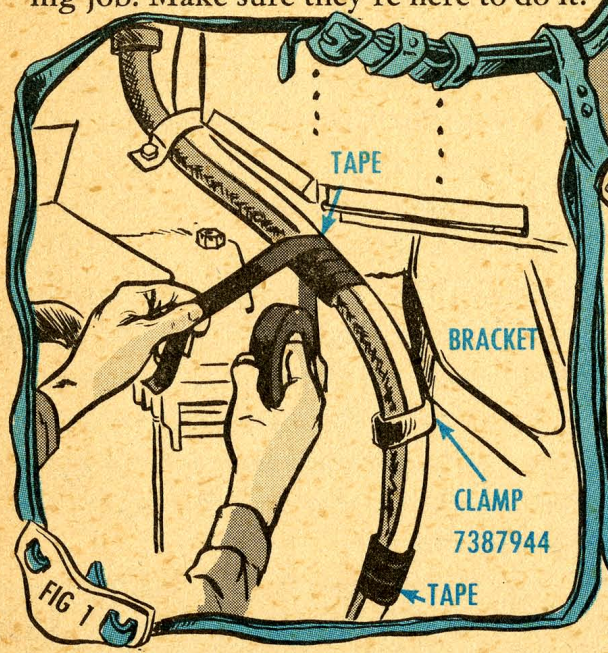
That's what your M48 tank'll have...if you neglect to shove in that brake pedal when shifting out of PARK with the brakes locked. But that's not the half of it...

Depressing the pedal releases the brake return spring pressure from the brake locking collar—the gimmick that keeps your brakes applied and your buggy rooted in PARK. But if you shift out **without** depressing the pedal you just buck the pressure of the spring. Which not only causes extra wear on the lock collar, it puts a lot of unnecessary strain on your shifting mechanism. Have even seen shift levers bent and broken from such stuff. Tch! Tch!

Harness that Harness

Next time you climb into the turret of your M47 tank, take a good look at your hydraulic motor and tracking motor feed harness. If these lines are not dressed right they can foul up in your turret rotation.

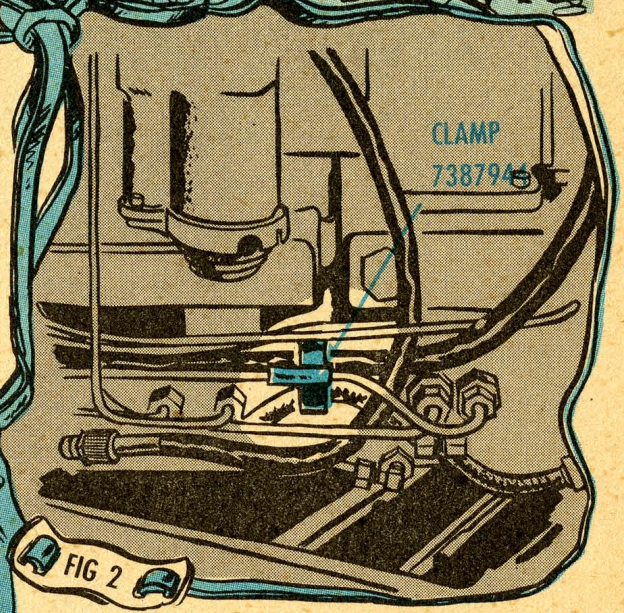
Two clamps and a clip do the harnessing job. Make sure they're here to do it.



Each clamp (Ord Stock No. G244-7387944) holds both harnesses together and in place: One attaches to the underside of the power pack support bracket (Fig 1); the other, at the back side of the power pack assembly (Fig 2).

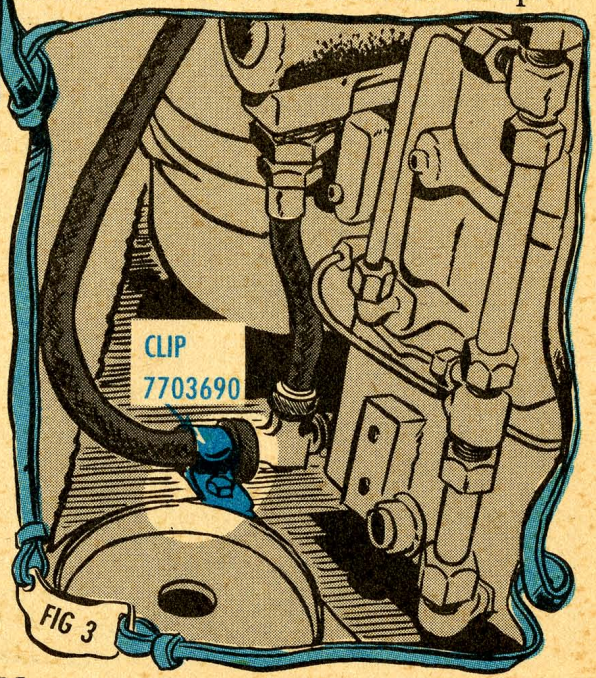
The clip (Ord Stock No. G226-7703690) holds the tracking motor harness snug to the corner of the turret basket floor (Fig 3).

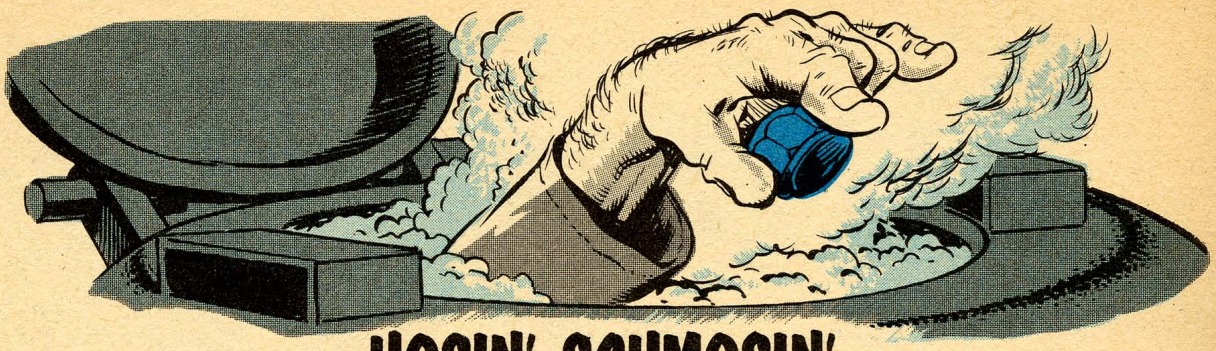
These harnesses should be kept dressed back toward the turret wall—so



that all possible slack will be kept above the point where they clamp together at the support bracket.

And, to make sure they stay put, the harnesses oughtta be taped together above **and** below the bracket clamp.





HOSIN' SCHMOSIN'

Hear some shady characters still like to slap a high pressure water or steam hose in their hulls and turrets for cleaning purposes.

Then pretty soon they come up with a ballistic computer, azimuth indicator, etc., that won't work right. And they wonder why.

Plain truth is that those sighting and fire control instruments in your turret are just not made to resist pressurized water or steam.

You can get by OK using the water you need for scrubbing down your buggy when she needs it. But—like TB Ord 548 tells you—lay off with that pressure stuff—puleeeese.

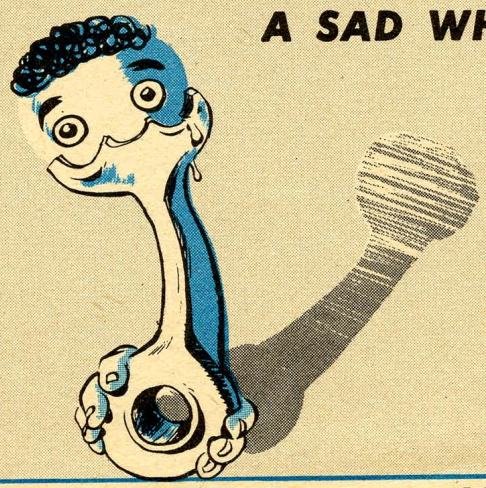
BARE MOUNTS

When preventive maintenance checks require that you pull the power pack on your M48 or M48A1 tank, please don't overlook cleaning and greasing the engine mounts.

For best results disassemble the mounts. Clear off all the muck and grime with cleaning solvent and dig the crud out of the shaft's threaded section with a wire brush. Put a light coat of GAA on the mount's moving parts before you assemble them. Transmission mounts need the same attention.

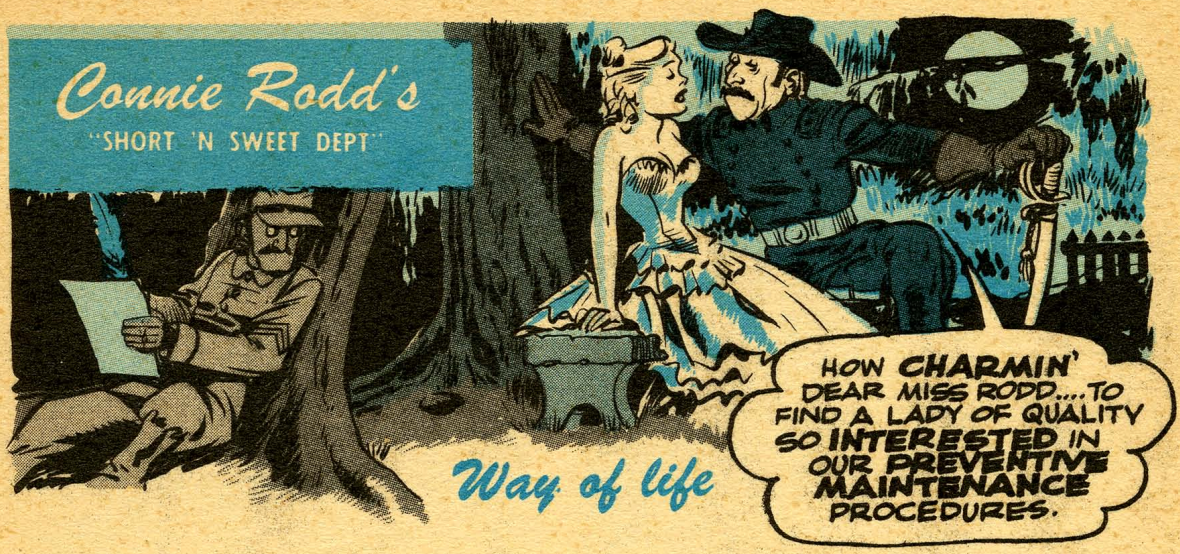
When you go to painting the engine compartment watch that you don't get paint on the shaft threads.

A SAD WHATZZIT



Maybe it doesn't look like a careless mishap, but that's exactly what it is. The object in point has been badly bent and weakened by improper use. Ask any tankman who likes to go in the wrong direction. He's seen it happen and shouldn't have any trouble with this Whatzzit.

FOR ANSWER SEE PAGE 20



Way of life

To keep from committing suicide, you'd better watch how you blow up a newly-mounted tire that's held in place by a lock ring.

You know what can happen? The minute that tire gets enough air in it, the lock ring can go flying—and, brother when that happens, anyone or anything standing in its way is gonna find a hole in him big enough to drive a truck through.

If you want to live your life through, you can side-step this flying disc by turning the tire away from you; that is, when

you go to blow up a newly-mounted tire, turn the side that holds the lock ring away from you and then inflate the tire. But make sure no one is standing in the way of that ring—they might want to live, too.

By the way, if you want to know all about these lock rings and how to handle them, take some time to look over paras 50 and 51 of TM 9-1870-1 (Feb 55), "Care and Maintenance of Pneumatic Tires."

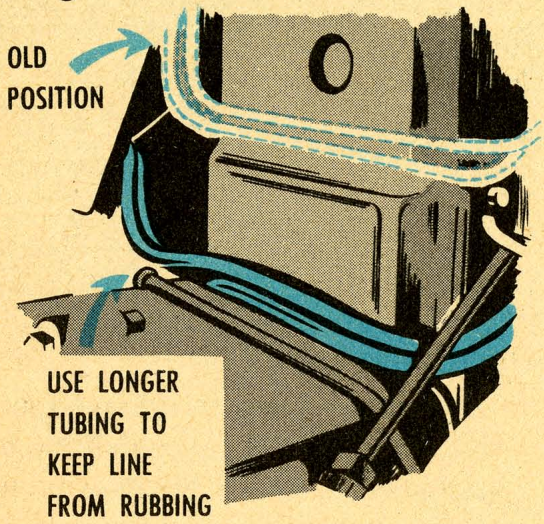
What a line

The first 10,000 or so G749-series 2½-ton trucks that rolled off the assembly line could develop a hitch in their stitching. The hitch lies in the air bleed and vacuum line that runs from the distributor to the diaphragm unit at the carburetor.

Originally, this line was put in so it was taut. Some lines developed a habit of rubbing against the firewall each time the cab flexes. Constant rubbing can put a hole in the line, throwing your governor out of whack and causing faulty operation of the automatic gear shift.

If you've got this hitch in your early model M135 or M211, the thing to do

is to have your Ordnance support unit get a longer piece of tubing (you can use Ord Stock No. 44-T-5080-15) and hook it up so it drops down lower and make it go around the block. This way the line'll have enough play in it so it won't rub against the firewall.



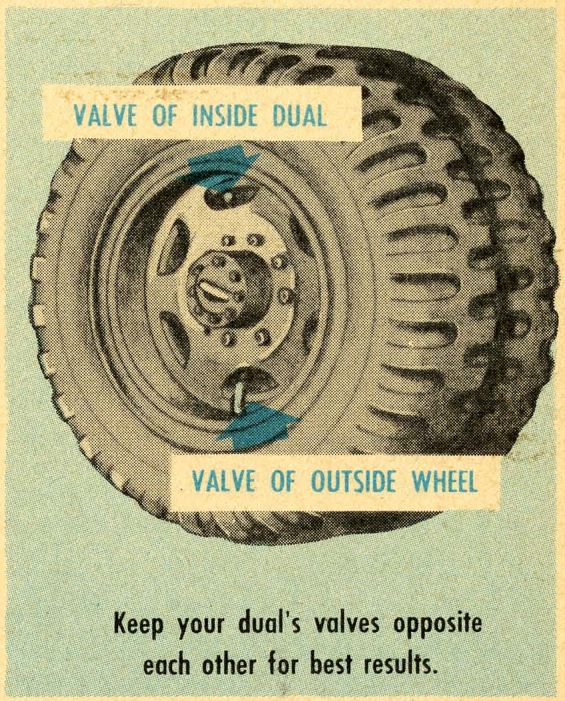
You don't need to worry about having this hitch if you've got a truck with a higher serial number than 9462. It was noticed by the design people and they promptly took care of it.

Valve poop

There's a bit of poop floating around on the valves for your dual-wheeled trucks and it'll help you in checking the air pressure of those tires.

Unless that valve is positioned just right, you're going to have a rough time getting your tire gage down on it to get a true reading. If you'll take a look at the picture, you'll see that the valve of your outside dual points in toward the vehicle and is opposite the valve on the inside dual, which points out and away from the vehicle. When your valves are in this position, you'll always know where they are—even when you're checking tire pressure at night.

Of course, you always make sure your valves are rightly centered in the valve holes and placed so they extend through the wheel handholes—this way you won't bang your knuckles going after them and the stems won't scrape against the brake drums.



Keep your dual's valves opposite each other for best results.

The best thing to do is treat those valves like it says in TM 9-1870-1 (Feb 55), a mighty good book to have around when you're working with tires.

Ram it

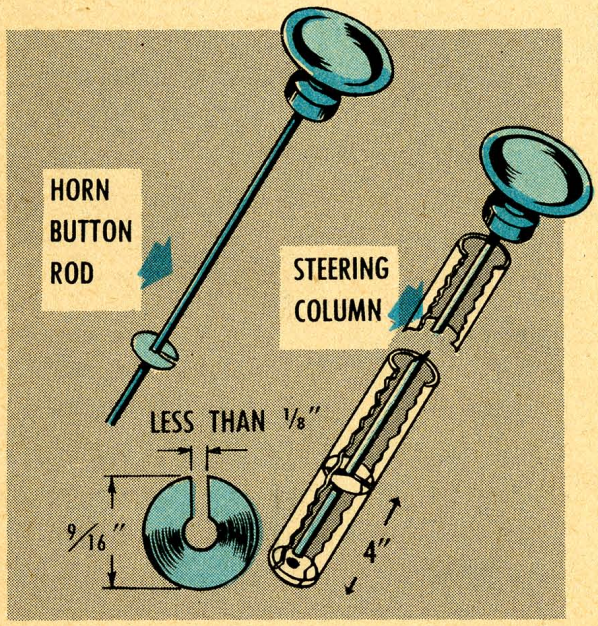
A guy can spend half a lifetime trying to get that horn button rod back into place on his Jeep. Of course, you know you have to take that rod out when you remove the steering wheel.

The tip of the rod goes through a small hole in a bushing way deep in the

steering column. It's been a heckuva job trying to poke it through this hole, but now it'll be easy.

A centering disc has been used by higher echelon for a couple of years to do the job. Right soon, you'll be able to get this disc by using Ord Stock No. G758-8332677.

Till you get this item, you can make the disc with some stiff leather or fiber. The diameter of the thing is 9/16 inch. Punch a hole in the center of the disc just a bit smaller than the horn rod's 1/8-in

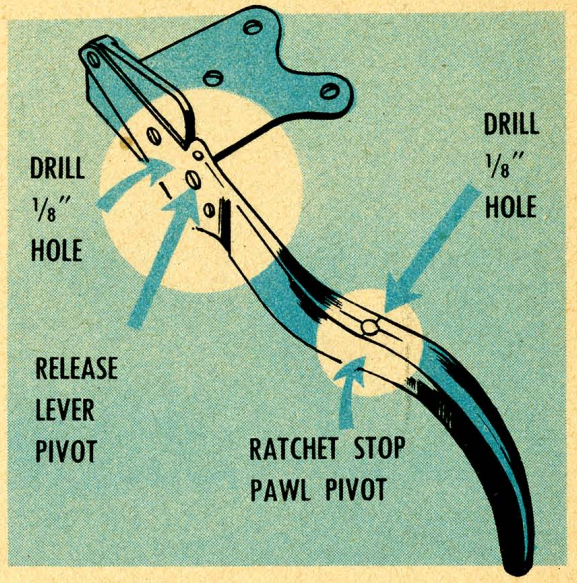


diameter and cut a strip out from the center to the outer edge of the disc.

Now all you have to do is slip the disc about four inches from the rod's end and stick your rod in. The tip'll go right into the hole in the steering column.

A handy brake

A few M38A1 Jeeps and M170 front-line ambulances have been having handbrake horrors because up till now there's been no way of really getting lube on to the pivots of the brake-release-lever and the ratchet stop pawl.



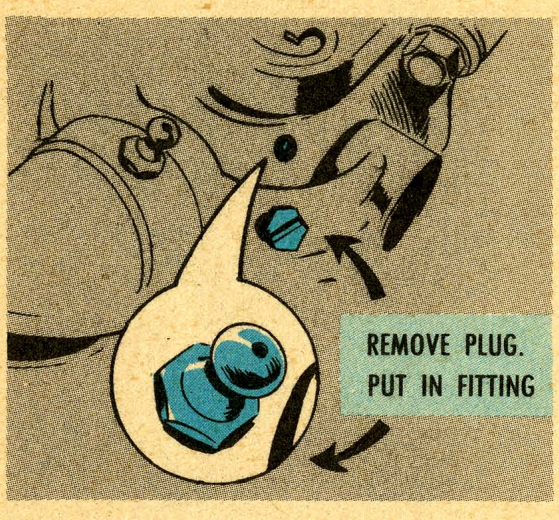
But now that MWO Ord G758-W5 (10 Oct 55) is out, there should be no sweat. The MWO tells you to drill two 1/8-in holes on the top of the handbrake body—one right above the release lever pivot and the other right above the ratchet stop pawl pivot. After this is done, it's easy to get lube down on those pivots at every 1000 miles (C service).

This MWO's in the normal priority class, but it'd be a good idea to get the job done before the handbrake hands you some headaches.

Monkey business

By now some of you grease-monkeys are probably wondering what gives with the universal-joints in your M38A1 Jeeps. Some of these joints got plugs in 'em; others got grease fittings.

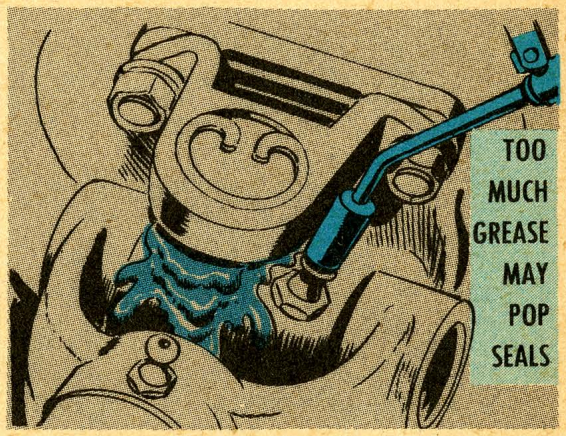
Well, here's the poop in a nutshell: the plug has been replaced with a grease fitting on all A1's now rolling off



the assembly line. If your Jeep has a plug, you know it's one of the older ones.

If you come across universal joints with plugs in 'em, take them out and put grease fittings in like it tells you in MWO Ord G758-W4 (2 May 55).

Greasing those universal-joints takes a steady hand and a keen eye. The way to do it is grease the joints at every **D** service and put just enough into them so you're sure they're greased. One shot should do it, but no more. Don't wait for the grease to come oozing out like on other grease fittings. This way you'll be safe.

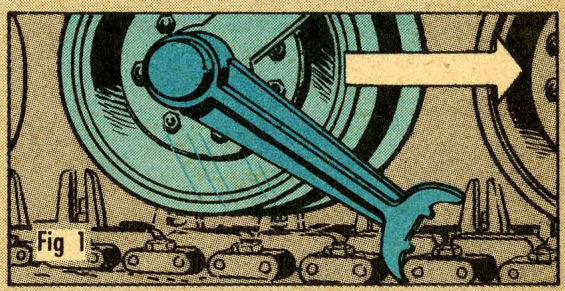


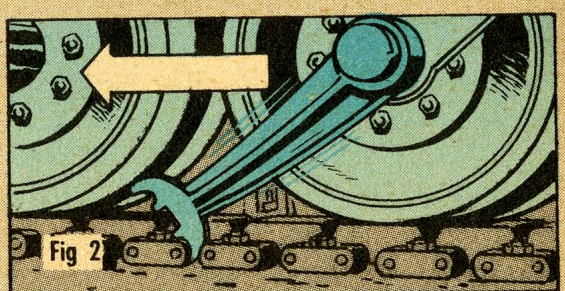
WHATZZIT ANSWER

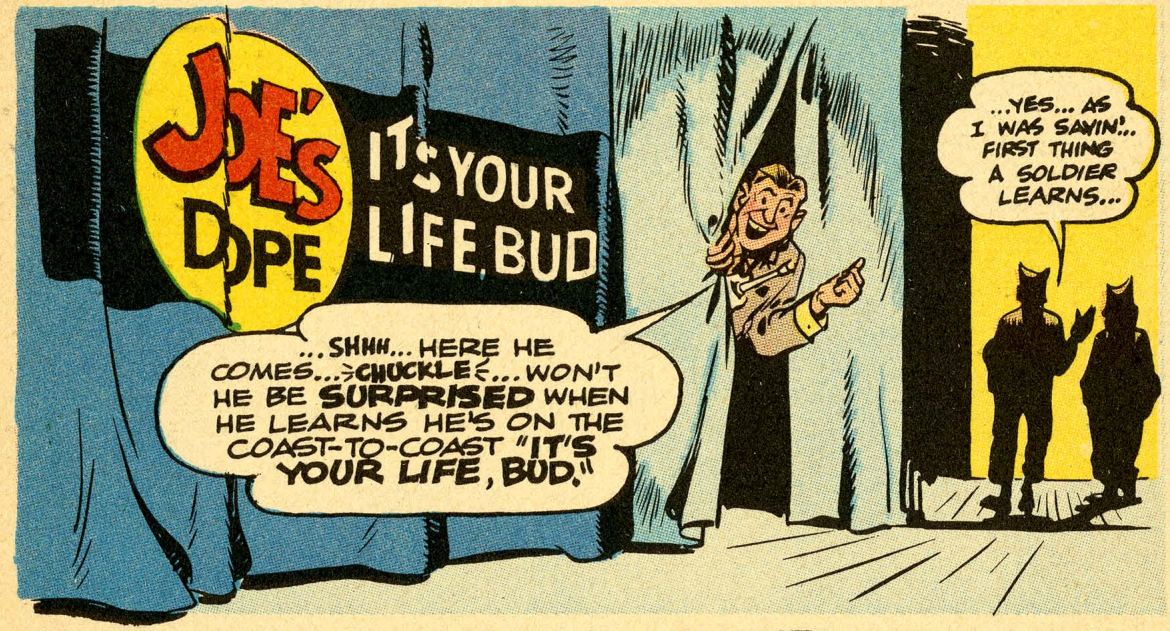
Yep. It's a road wheel lifter that couldn't help but sort of knuckle under when the tank was **backed up** to raise a road wheel.

Your lifter will hold its shape and do the job without a grunt—if you remember always to set it up to move your buggy **forward** for the lift. Working at this angle (Fig. 1) you're merely lifting the arm and the share of the tank's weight it normally supports. And the arm will swing up over the arc of the lifter, smooth as a cam action.

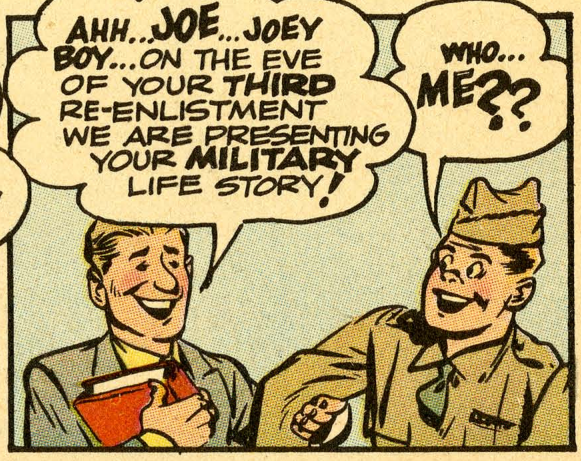
But—going at it bassackwards (Fig. 2) you set the arm and lifter against each other in a straight line like a battering ram. And when those 800-or-so horses start shoving on the track—something's got to give!

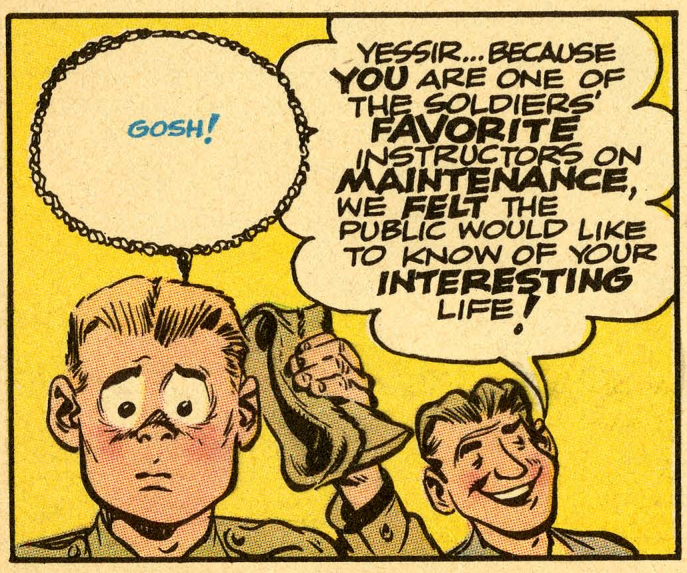




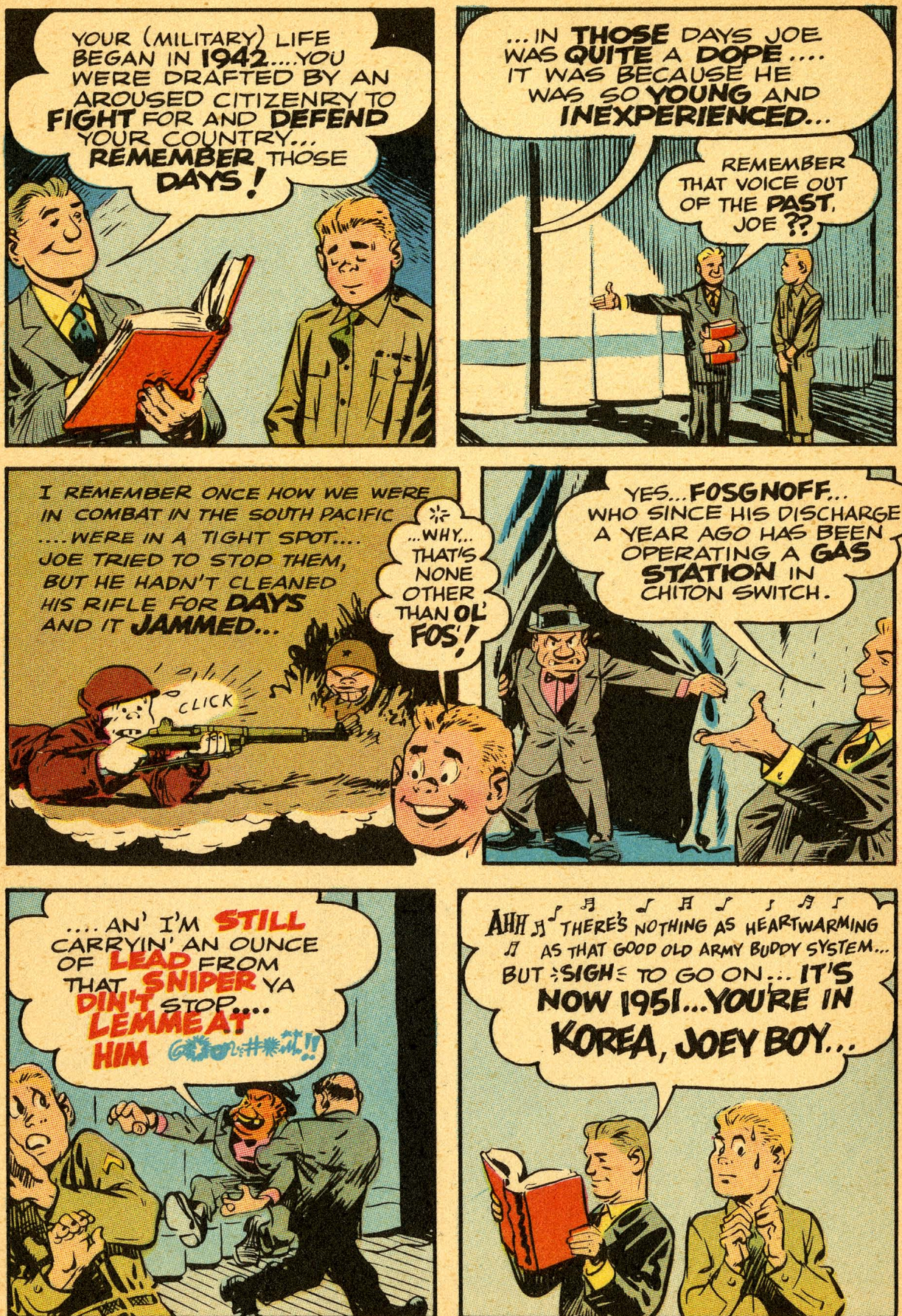

JOE'S DOPE
IT'S YOUR LIFE, BUD
...SHHH... HERE HE COMES...CHUCKLE...WON'T HE BE SURPRISED WHEN HE LEARNS HE'S ON THE COAST-TO-COAST "IT'S YOUR LIFE, BUD."
...YES... AS I WAS SAYIN'... FIRST THING A SOLDIER LEARNS...

...IS...THAT A SOLDIER'S READINESS FOR ACTION DEPENDS LARGELY ON MAINTENANCE!

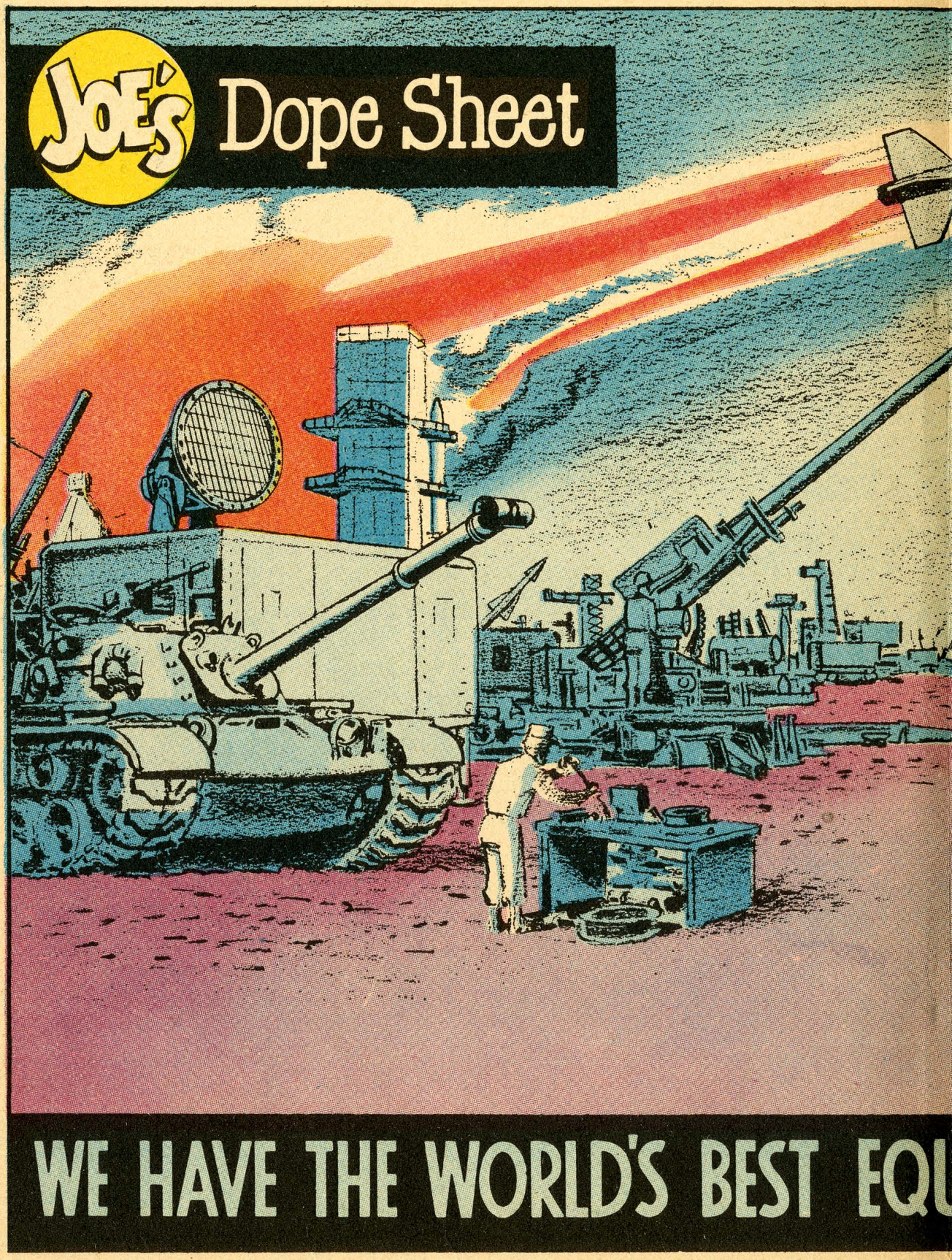

AHH...JOE...JOEY BOY...ON THE EVE OF YOUR THIRD RE-ENLISTMENT WE ARE PRESENTING YOUR MILITARY LIFE STORY!
WHO... ME??


GOSH!
YESSIR...BECAUSE YOU ARE ONE OF THE SOLDIERS' FAVORITE INSTRUCTORS ON MAINTENANCE, WE FELT THE PUBLIC WOULD LIKE TO KNOW OF YOUR INTERESTING LIFE!

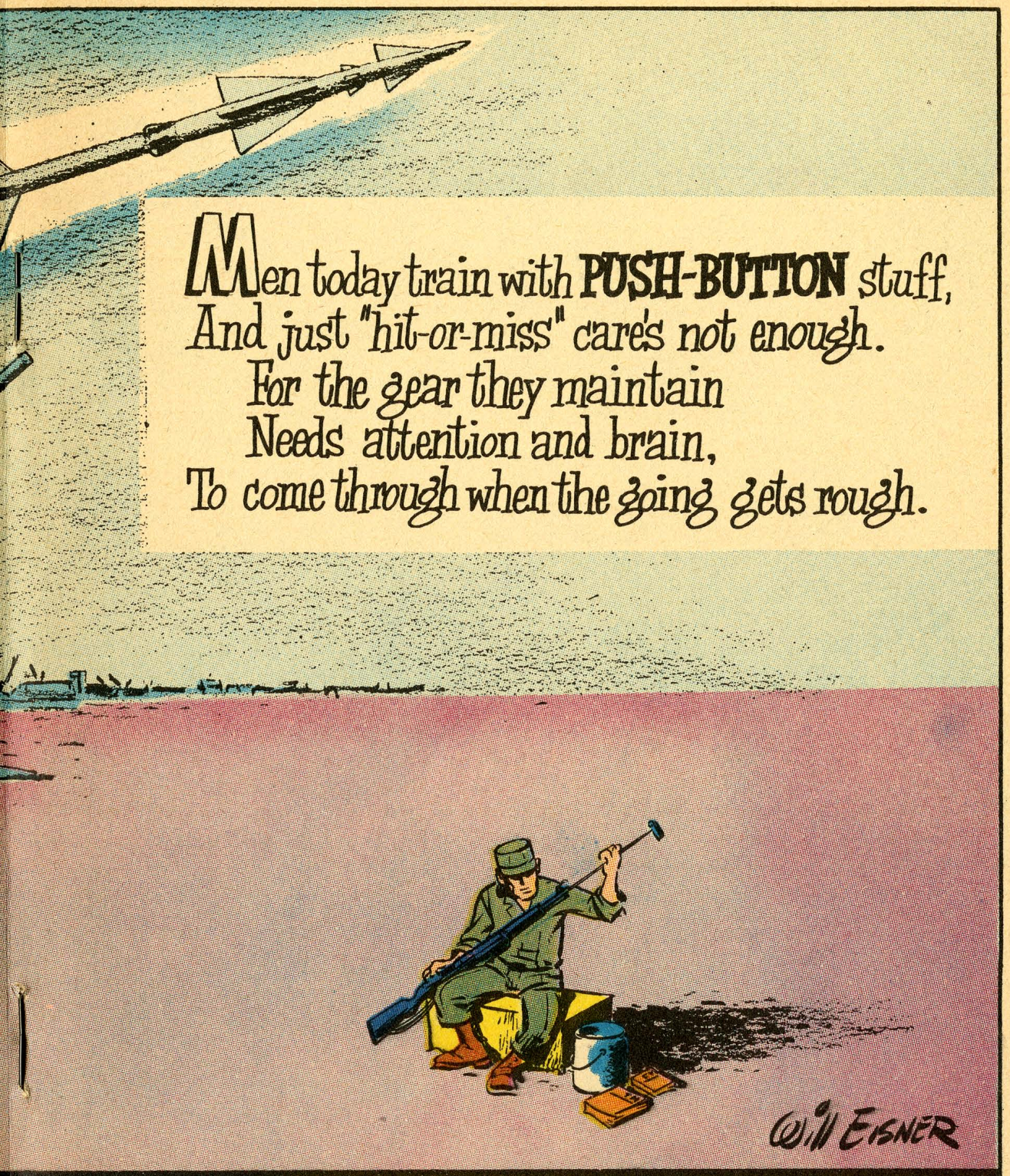
WHY ARE YOU WEEPING? DON'T BE NERVOUS...
WHO'S NERVOUS?? I'M JUST THINKING OF WHAT A GOOF I WAS IN THE PAST!


YOUR (MILITARY) LIFE BEGAN IN 1942....YOU WERE DRAFTED BY AN AROUSED CITIZENRY TO FIGHT FOR AND DEFEND YOUR COUNTRY... REMEMBER THOSE DAYS!
...IN THOSE DAYS JOE WAS QUITE A DOPE.... IT WAS BECAUSE HE WAS SO YOUNG AND INEXPERIENCED...
REMEMBER THAT VOICE OUT OF THE PAST, JOE??
I REMEMBER ONCE HOW WE WERE IN COMBAT IN THE SOUTH PACIFIC ....WERE IN A TIGHT SPOT.... JOE TRIED TO STOP THEM, BUT HE HADN'T CLEANED HIS RIFLE FOR DAYS AND IT JAMMED...
CLICK
...WHY... THAT'S NONE OTHER THAN OL' FOS!
YES...FOSGNOFF... WHO SINCE HIS DISCHARGE A YEAR AGO HAS BEEN OPERATING A GAS STATION IN CHITON SWITCH.
.... AN' I'M STILL CARRYIN' AN OUNCE OF LEAD FROM THAT SNIPER YA DIN'T STOP.... LEMME AT HIM
AHH THERE'S NOTHING AS HEARTWARMING AS THAT GOOD OLD ARMY BUDDY SYSTEM... BUT SIGH TO GO ON... IT'S NOW 1951...YOU'RE IN KOREA, JOEY BOY...

YOU'RE WITH A TANK OUTFIT....IT'S A FORWARD AREA...YOU'RE IN THE MOUNTAINS...IT'S SUB-ZERO WEATHER.... THAT'S YOU CLEANING THE TUBE OF A 90MM
YOU WERE SUPPOSED TO MIX SOME ALCOHOL WITH THE SOAPY WATER, BUT AS YOU OFTEN DID IN THOSE DAYS...YOU IGNORED THE TM... AND JUST USED WATER....
TM
THE PIECE FROZE.... JUST AS THE ENEMY TANKS CAME INTO VIEW....
...UNOPPOSED BY THE USELESS WEAPON...THEY LIESURELY MASHED MY TRUCKS TO BITS!
ULP HELLO, SERGEANT HALF MAST!
AND ANOTHER THING...UNTIL THAT BOY LEARNED THAT LUBRICATION IS EQUIPMENT'S LIFE-BLOOD HE WASTED THOUSANDS OF DOLLARS OF...
GET RID OF HIM!
... MILITARY EQUIPMENT ... MAINTENANCE IS THE ART OF SAVING LARGE SUMS WITH LITTLE EFFORT
AHEM... IN A MOMENT WE'LL BE BACK... BUT NOW A WORD FROM OUR SPONSOR...

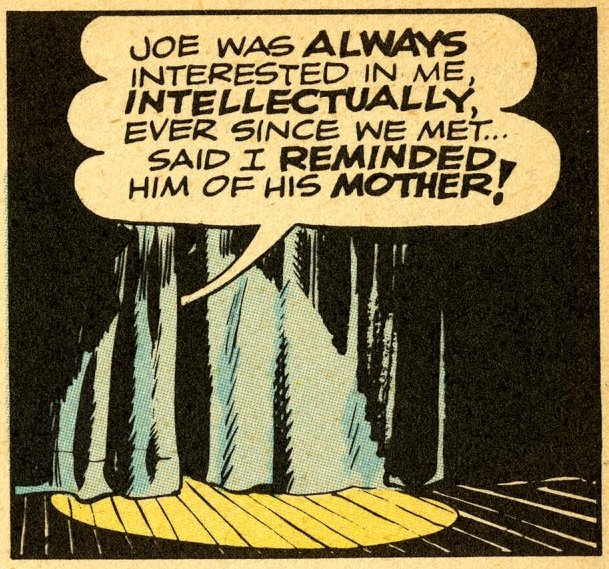

JOE'S
Dope Sheet
WE HAVE THE WORLD'S BEST EQU

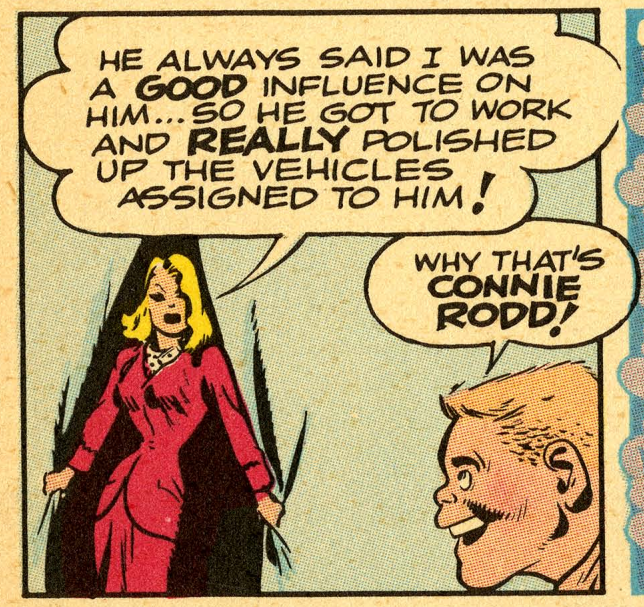
JOE'S Dope Sheet
Men today train with PUSH-BUTTON stuff,
And just "hit-or-miss" care's not enough.
For the gear they maintain
Needs attention and brain,
To come through when the going gets rough.
WILL EISNER
WE HAVE THE WORLD'S BEST EQUIPMENT...Take care of it

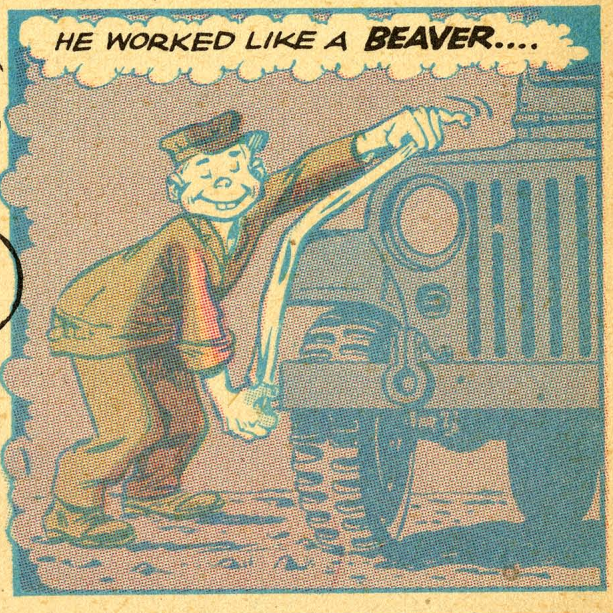


UIPMENT...Take care of it

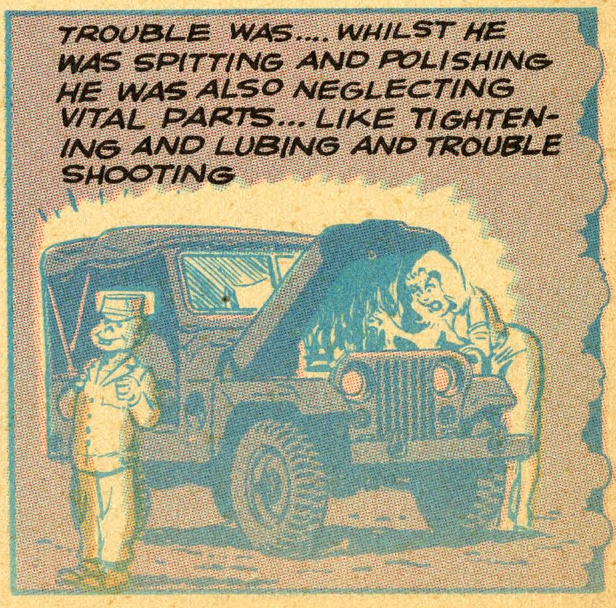
AND NOW BACK TO "IT'S YOUR LIFE, BUD"... AND OUR JOE.... IT'S 1953-4 ...AND HERE'S ANOTHER VOICE FROM THE PAST!

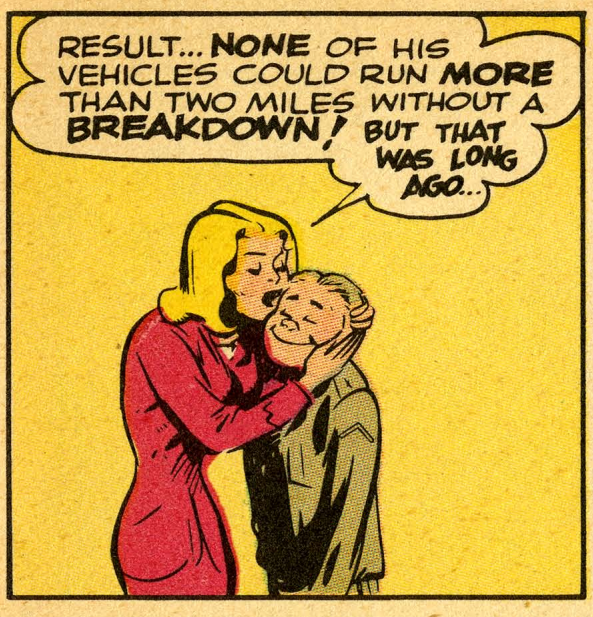

JOE WAS ALWAYS INTERESTED IN ME, INTELLECTUALLY, EVER SINCE WE MET... SAID I REMINDED HIM OF HIS MOTHER!

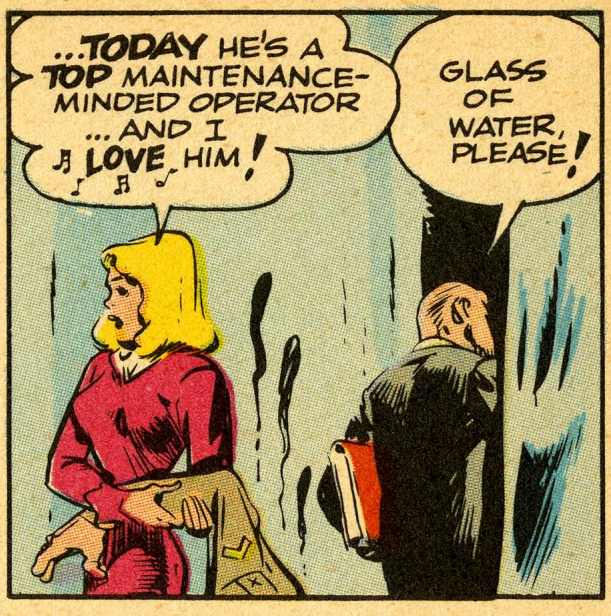

HE ALWAYS SAID I WAS A GOOD INFLUENCE ON HIM... SO HE GOT TO WORK AND REALLY POLISHED UP THE VEHICLES ASSIGNED TO HIM!
WHY THAT'S CONNIE RODD!

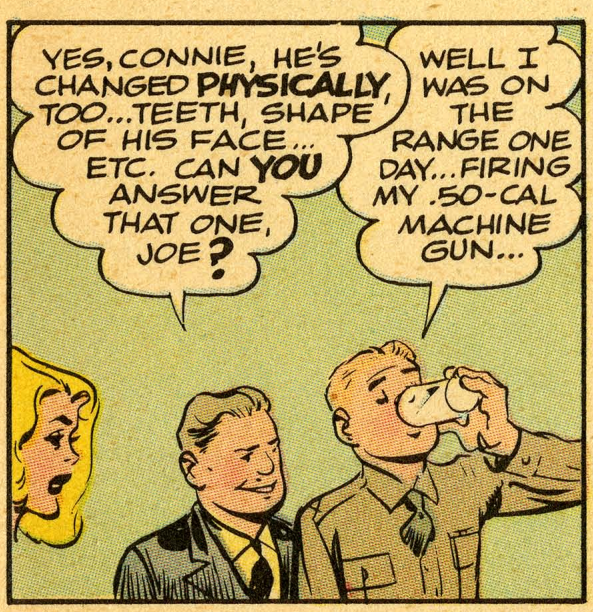

HE WORKED LIKE A BEAVER....

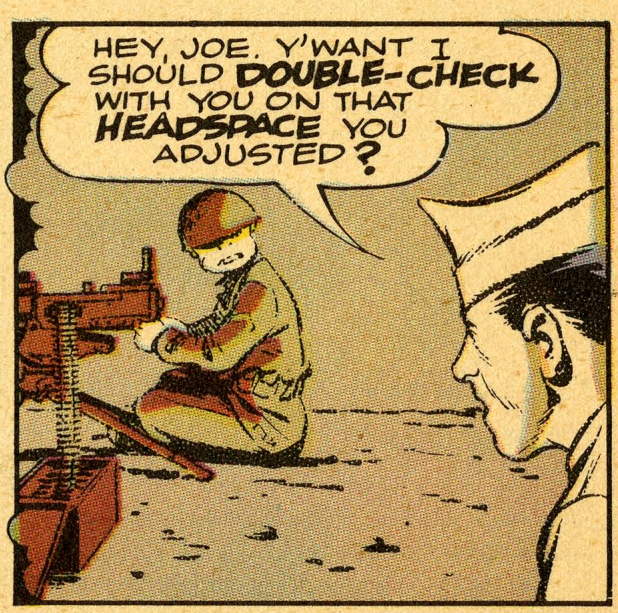
ER...JOE... AH... HOW ABOUT SOME LUBE?
GO 'WAY, BUB, Y'BOTHERING ME!

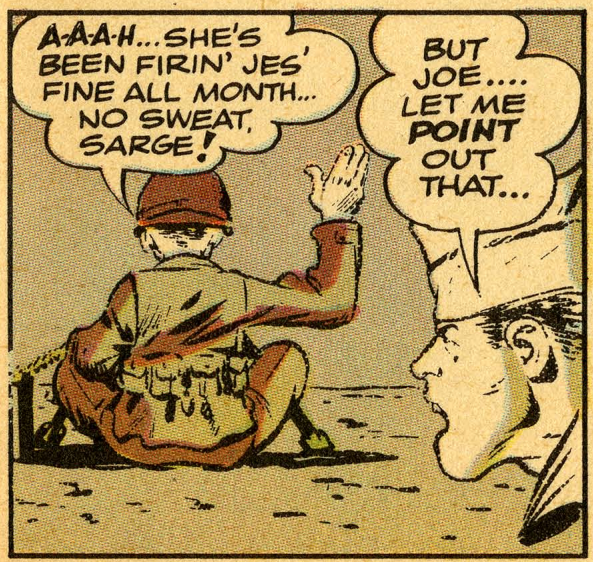

TROUBLE WAS.... WHILST HE WAS SPITTING AND POLISHING HE WAS ALSO NEGLECTING VITAL PARTS... LIKE TIGHTENING AND LUBING AND TROUBLE SHOOTING

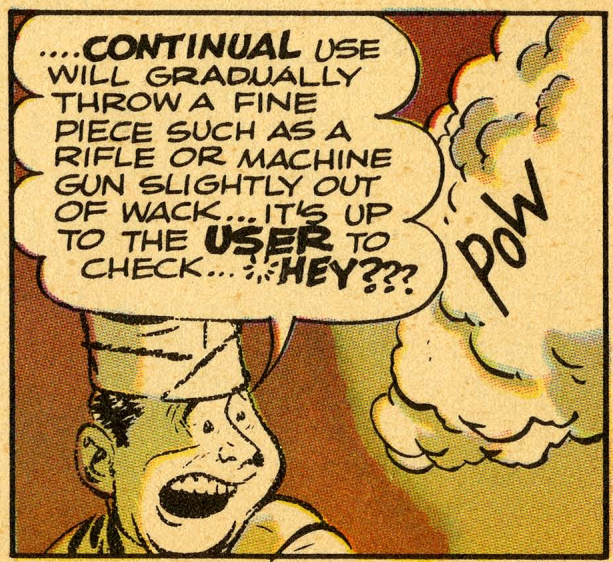

RESULT... NONE OF HIS VEHICLES COULD RUN MORE THAN TWO MILES WITHOUT A BREAKDOWN!
BUT THAT WAS LONG AGO...


...TODAY HE'S A TOP MAINTENANCE-MINDED OPERATOR ...AND I LOVE HIM!
GLASS OF WATER, PLEASE!


YES, CONNIE, HE'S CHANGED PHYSICALLY, TOO...TEETH, SHAPE OF HIS FACE... ETC. CAN YOU ANSWER THAT ONE, JOE?
WELL I WAS ON THE RANGE ONE DAY... FIRING MY .50-CAL MACHINE GUN...


HEY, JOE. Y'WANT I SHOULD DOUBLE-CHECK WITH YOU ON THAT HEADSPACE YOU ADJUSTED?


A-A-A-H... SHE'S BEEN FIRIN' JES' FINE ALL MONTH... NO SWEAT, SARGE!
BUT JOE.... LET ME POINT OUT THAT...


....CONTINUAL USE WILL GRADUALLY THROW A FINE PIECE SUCH AS A RIFLE OR MACHINE GUN SLIGHTLY OUT OF WACK... IT'S UP TO THE USER TO CHECK... HEY???
POW

...ER... SARGE.... I THINK I'D BETTER CHECK THE HEADSPACE ON THIS PIECE!
I HAD GOOFED IN SETTING HEAD-SPACE AND BLOOY! ARMY PLASTIC SURGEONS ARE SURE SLICK!
??
POW!
LEGGO OF ME
WHOSE TRUCK IS OUT THERE AT THE EXIT ???
WHY... THAT'S OUR MOBILE TV UNIT, SERGEANT.
MISERABLE MAINTENANCE! HOW YOU GUYS CAN STAY IN BUSINESS IS A MIRACLE... Y'TIRES NEED SWITCHIN'.... FILTER NEEDS CHANGE... OIL NEEDS CHANGE... BATTERY CABLE FRAYED... POSTS CORRODED... WHY IF YOU WERE IN MY OUTFIT, I'D....
GOOD NIGHT FOLKS...

TRAILER PM SERVICES

Dear Half-Mast,

I'd sure appreciate a little help on a problem that's been thrown my way by one of our maintenance men. He upped to me and asked, "How do you schedule PM services for trailers and semi-trailers?"

I thought I was pretty hep on this scheduling business, but when I dug out my copy of TM 9-2810 (Oct 53), I was flubbed. Couldn't find a thing. Did I overlook it, Sarge?

Lt G. D. B.

Dear Lt G. D. B.,

Yep—the answer to your question is right in TM 9-2810, but it's pretty hard to uncover unless you do a little interpretating.

First, one thing's got to be cleared up—a trailer is a wheeled vehicle, just like any truck. As long as a thing on wheels is used to carry personnel or material, it's a wheeled vehicle. So, the parts of TM 9-2810 ("Tactical Motor Vehicle Inspections and Preventive Maintenance Services") that deal with wheeled vehicles also deal with trailers.

According to TM 9-2810, when a trailer or semi-trailer is always used with the same prime-mover, they're serviced together. A blotter, record or card file should be kept to record mileage of trailers and semi-trailers which are not used with the same prime-mover.

What this means is that if you use a trailer with the same prime-mover all

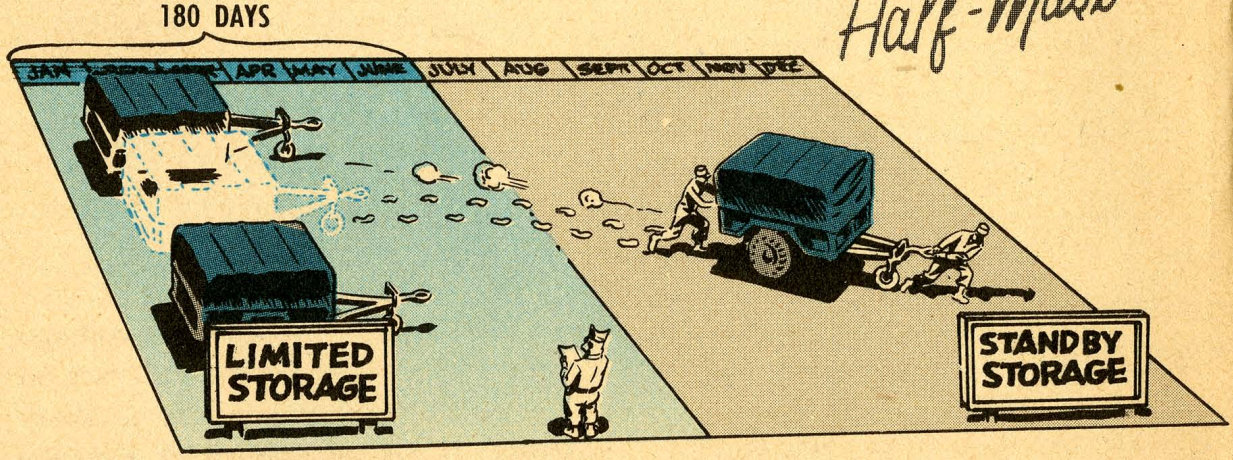
the time, that trailer gets its service the same time the prime-mover gets its service (B, C and D).

Now, for those trailers that aren't used regularly with prime-movers. Thumb to Table I on page 3 of TM 9-2810. This table lists the interval of services for wheeled vehicles, tracked vehicles and motorcycles. Trailers would come under the wheeled vehicle section of this table. When a trailer's used with many different prime-movers, a card file or some other kind of record is kept of its mileage so it can get its B, C and D services on time. A trailer's wheel bearings, by the way, are repacked at every D2 service, just like any other wheeled vehicle.

Let's go to the other end of things for a minute. Say you have a trailer that's going to lay around for a long time—doing nothing but taking up space. Para 13b (9) of TM 9-2810 says, "When vehicles are not required for operation, they may be placed in limited storage for periods up to 90 days." This 90-day term has been changed to 180 days by Change 6 to AR 700-105 (28 Jan 54).

So, if you've got a trailer that isn't going to be used, you can put it in limited storage until you need it—up to 180 days. If this 180-day period passes and you still don't need the trailer, it switches to stand-by storage. SB 9-4 (9 June 52) tells you how to maintain vehicles that are kept in storage.

Half-Mast

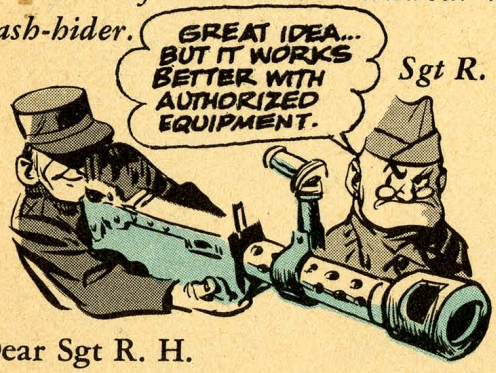


CAN'T HAVE ONE WITHOUT THE OTHER

Dear Half-Mast,

I have found a few of our 1919A6 machine guns too stiff to sustain fire when they were issued to us. However, we put the flash-hider on and they worked OK. Then after 500 or 600 rounds they'd work OK without the flash-hider.

Sgt R. H.



Dear Sgt R. H.

The flash-hider and the booster cap are made together, and they're supposed to be used with the 1919A6. So, why take a chance on your gun not firing without it?

Half-Mast

USING TACHOMETER

Dear Half-Mast,

I'd like to know if the Tachometer, engine, electric, 0-4000-RPM, Ord Stock No. 118-T-231, FSN 6680-335-2969, can be used on 6- and 12-volt systems as well as on the 24-volt vehicles.

TSgt G. P. H.

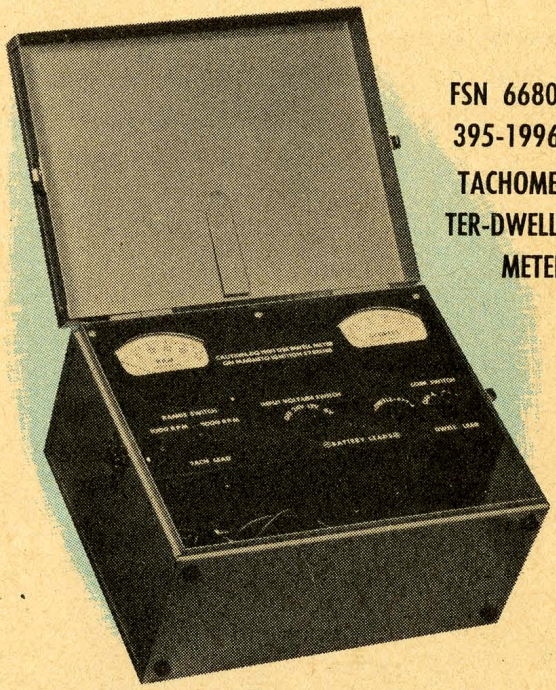
Dear Sgt G. P. H.,

It sure can. In fact you can use it on magneto ignition systems too, if you like—any four-stroke cycle engine.

That tachometer has its own power supply—dry cell batteries inside the box. All it gets from your engine are high-tension impulses from the spark plug wire. It counts these and tells you your engine speed. So, you can use it on any four-cycle engine, regardless of number of cylinders, battery voltage, air or liquid cooled, or what have you.

But you should hear soon that this tachometer has been superseded by FSN 6680-395-1996, Tachometer-Dwell-Meter; engine secondary type tachometer, primary type cam dwell meter, 6, 12, and 24-volt, vehicle battery operated. 0-1000 and 0-5000-RPM ranges, 0-50 degree dwell meter range.

So you see, the later model is dependent on an outside source of power and



FSN 6680-395-1996, TACHOMETER-DWELL-METER

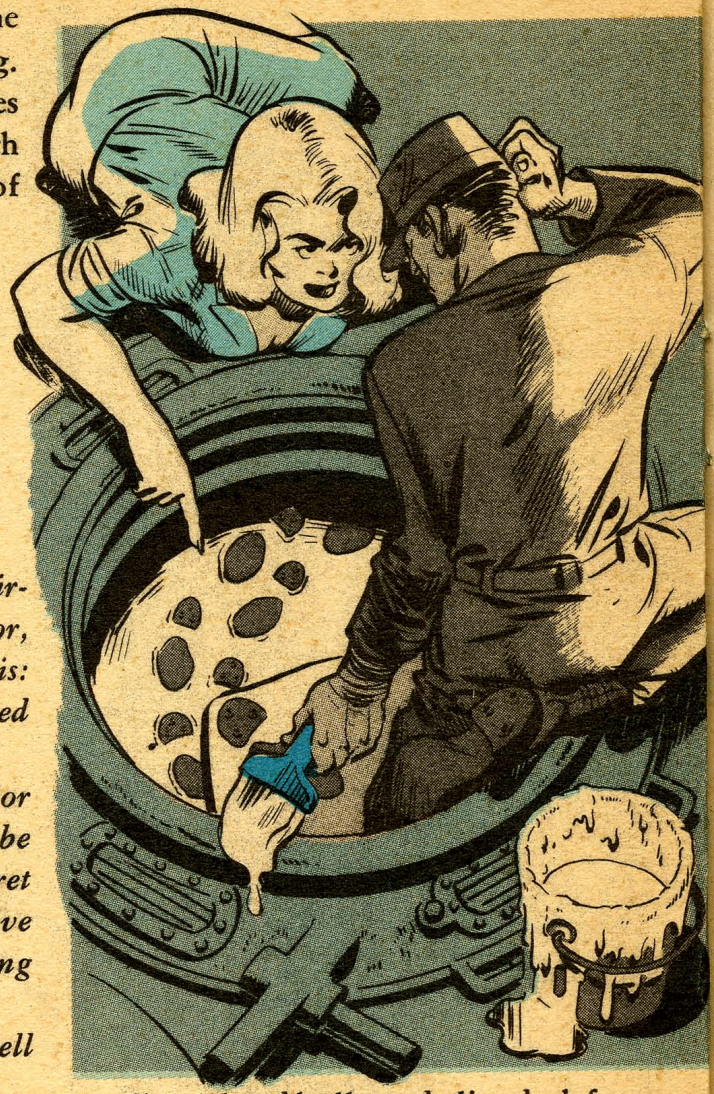
HERE'S THAT NEW TACH

has a range for 6-, 12- and 24-volt systems. If you wanted to use this tach on a magneto fired engine, the auxiliary battery or DC generator that gives the

power to the lighting system, also is the power that sends your meter scanting.

But, since the new one incorporates a dwell-meter, you can now get a much better check on your waterproof ignitors without opening them up.

Half-Mast



OD'S OUT

Dear Half-Mast,

Part of my duties as a turret repairman require me to serve as an inspector, and one question that I'm often asked is: what color is the turret floor supposed to be?

I know that the military specs call for the interior of a combat vehicle to be white. But, does this include the turret floor? Many crews paint the floor olive drab because it keeps the turret looking better.

Can you give me the answer or tell me where to find it?

SP3 F. J. S.

Dear Specialist F. J. S.,

You'll find the basic authority in MIL-V-3329, "General Requirements for Military Specifications for Vehicles, Combat, Self-Propelled and Towed" (30 Nov 50). Para 3.5.4.1 puts it this way:

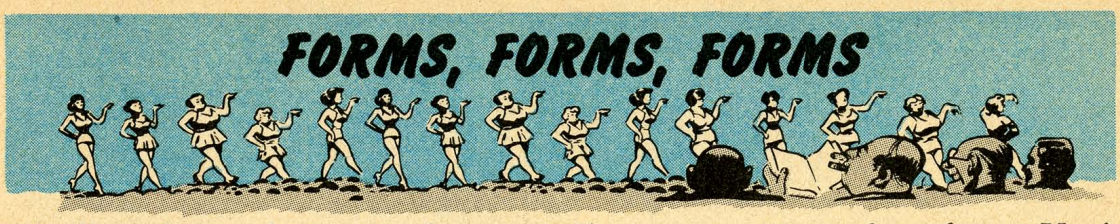
"Interiors of vehicles, including hull, shall receive one coat of gloss enamel conforming to specifications TT-E-489, with dry-film thickness of 0.75 to 1.25 mils. Color shall be white for interiors of tanks and other combat vehicles with totally enclosed hulls, and olive drab for interior of other vehicles."

Now, does "interior" of a tank include the turret floor?

Yep. That's the interpretation. OD's out. Outside, that is. Anything that can be seen from the outside (when she's buttoned up) should be OD.

But anything that gets paint inside gets white (non-skid white enamel), Eng Stock No. 52-3424.750.010, film thickness 1/32 to 1/16 inch).

Half-Mast



Wait a minute—don't turn that page—if you want to hear about forms. You're right! There are fat forms, skinny forms, short forms, and long ones. And Believe It or Not (by Half-Mast) it takes all kinds to make a situation interesting.

There's the little DD Form 313, US Government Operator's Permit and the big DA Form 478, Organizational Equipment File (Jacket File), but regardless of the size, it's important that you know and use the forms.

HERE ARE THE ONES YOU SHOULD HAVE IF YOU'RE OPERATING A BATCH OF VEHICLES

FORM NUMBER	DATE	TITLE
DD 110	Dec 53	Vehicle and Equipment Operational Record
DD 200	Nov 50	Report of Survey
DD 313	Aug 51	Motor Vehicle Operator's Permit
*DD 314		Preventive Maintenance Schedule & Record (Admin veh)
*DD 315		PM Service & Inspection (90 days or 2,000 miles) (Admin veh)
*DD 316		PM Service & Inspection (Annual 12,000 miles) (Admin veh)
*DD 317		PM Windshield Sticker (Admin veh)
DD 362	Jun 52	Statement of Charges
*DD 425		PM Service (bi-monthly) (Admin veh)
DD 518	May 51	Accident Identification Card
DA 17	Oct 54	Requisition for Publications and Blank Forms
DA 17-1	Oct 54	Requisition for Publications and Blank Forms (continuation sheet)
DA 285	Apr 53	Supervisor's Report of Accident
DA 348	Mar 55	Driver's Qualification Record
DA 421 (or DA 9-71)		Stock Control Card
DA 446	Apr 48	Issue Slip
DA 447	Mar 47	Turn-in Slip
DA 460	May 54	Preventive Maintenance Roster
DA 461	Jun 51	Work Sheet for Wheel and Half-track Vehicles
DA 462	Jun 51	Work Sheet for Full-track Vehicles
DA 463	Apr 45	Work Sheet for Motorcycles
DA 464	May 50	Work Sheet for Engineer Equipment
DA 468	Oct 55	Unsatisfactory Equipment Report
DA 478	May 53	Organizational Equipment File (Jacket File)
DA 811	Jun 55	Work Request and Job Order
DA 9-68	Apr 54	Spot Check Inspection Report, Wheeled Vehicles
DA 9-69	Jan 45	Spot Check Inspection Report, Track Vehicles
DA 9-71	Jul 55	Locator and Inventory Control Card
DA 9-75	Dec 49	Daily Dispatch Record of Motor Vehicles
DA 9-77	Apr 45	Job Order Register
DA 9-79	Feb 50	Parts Requisition
DA 9-81	Jun 44	Exchange Part or Unit Identification Tag
DA 10-117	Jul 53	Monthly Abstract of Issues of Gasoline, Oil and Operating Supplies
DA 10-118	Sep 53	Daily Issues of Gasoline and Oils
DA 11-238	May 51	Operator First Echelon Maintenance Check List for Signal Corps Equipment—Radio Communication, Direction Finding, Carrier, Radar. (To be used for radios found in tanks)
DA 11-240		Operator First Echelon Maintenance Check List for Signal Corps Equipment—Telephone Set. (To be used for telephones found in tanks)
SF 91	Jun 53	Operator's Report of Motor Vehicle Accident

*These are for administrative motor pool use only. See DA pamphlet 310-2 for a list of all the army's blank forms.

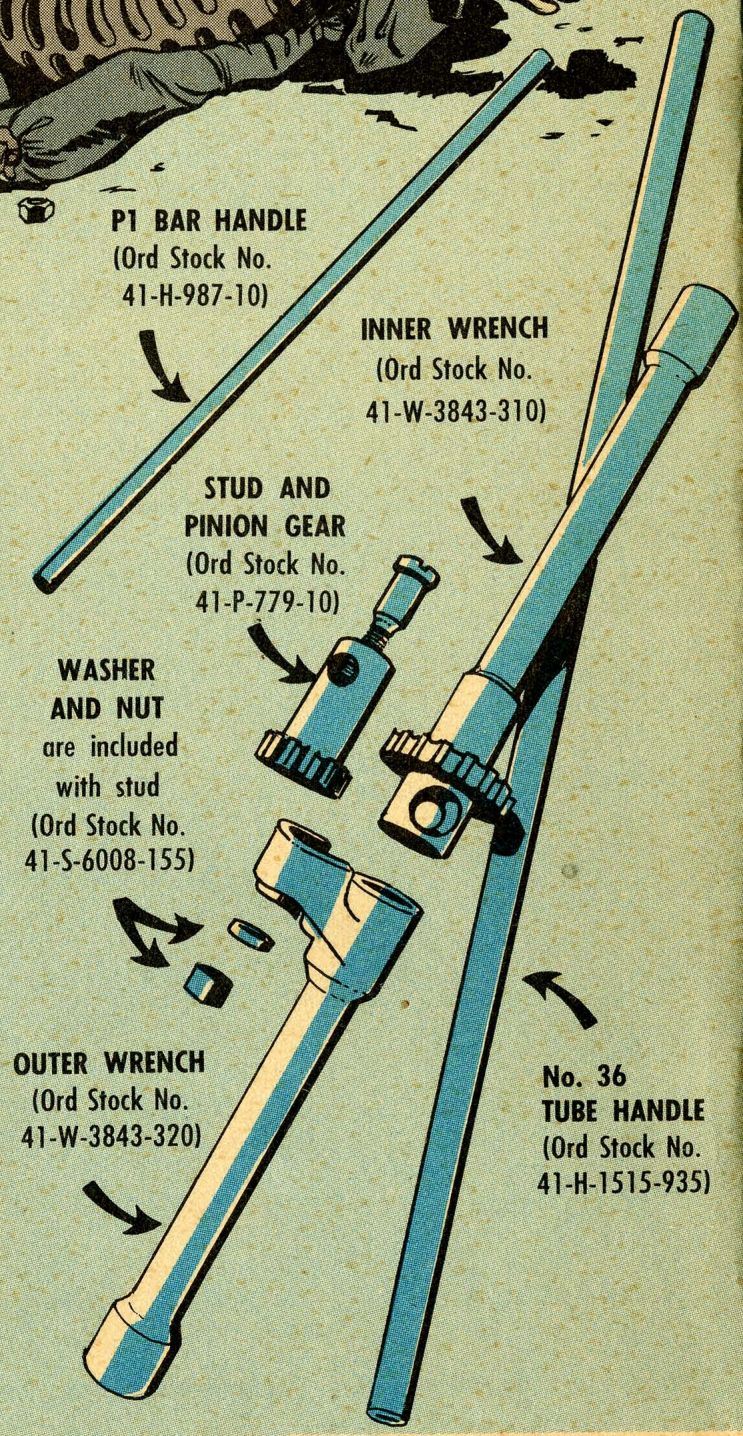
You don't have to be a superman to use that Wrench Set (Ord Stock No. 41-W-3830-10) that's found in your Tool Set, organizational maintenance (2d echelon), Set No. 1 common.

You lightweights can do just as good a job with your tool as the musclebound. Learn which part of the wrench you use with the nuts on the wheels of your vehicles.

First thing right off, see if you have all the parts to your wrench. Get acquainted with them.

Actually you've got two wrenches in your wrench set. The outer wrench has a 1⅝-in hex drive socket. The inner wrench a ¾-in square drive socket. By using the combined wrenches you can loosen corroded or frozen nuts.

The inner wrench (large gear) is turned with the No. 36 tube handle. The outer wrench (small gear) is turned with the P1 bar handle.



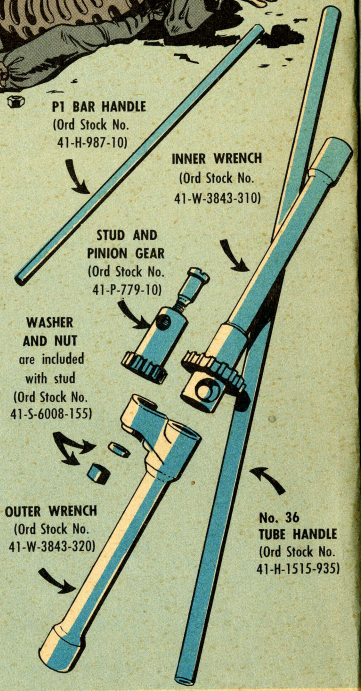
You don't have to be a superman to use that Wrench Set (Ord Stock No. 41-W-3830-10) that's found in your Tool Set, organizational maintenance (2d echelon), Set No. 1 common.

You lightweights can do just as good a job with your tool as the musclebound. Learn which part of the wrench you use with the nuts on the wheels of your vehicles.

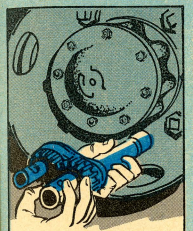
First thing right off, see if you have all the parts to your wrench. Get acquainted with them.

Actually you've got two wrenches in your wrench set. The outer wrench has a 1⅜-in hex drive socket. The inner wrench a ¾-in square drive socket. By using the combined wrenches you can loosen corroded or frozen nuts.

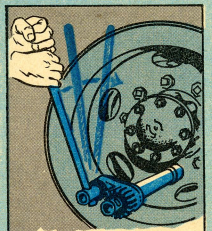
The inner wrench (large gear) is turned with the No. 36 tube handle. The outer wrench (small gear) is turned with the P1 bar handle.



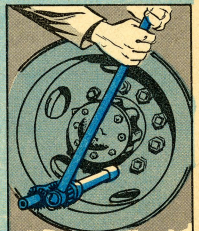
Now you know what your wrench set looks like. Here's what you can do with it...



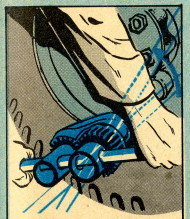
1. First off, this wrench is self-supporting. When it's on the wheel nuts it'll stay put. You can even stand on it and it won't fall off.



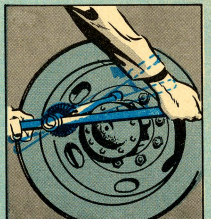
2. You can loosen the tightest hex-nut when you use the 18-in bar handle. Just put it through the smallest hole on the wrench and heave.



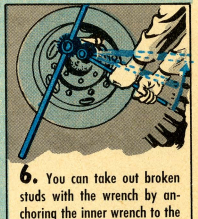
3. To loosen or tighten the square nut, you use the No. 36 tube handle. Put it through the large hole on the wrench and pull.



4. After you've loosened the hex-nut you can line up the two holes on the wrench and put the No. P1 bar handle through both holes. This makes a T-handle for removing the hex-nut.

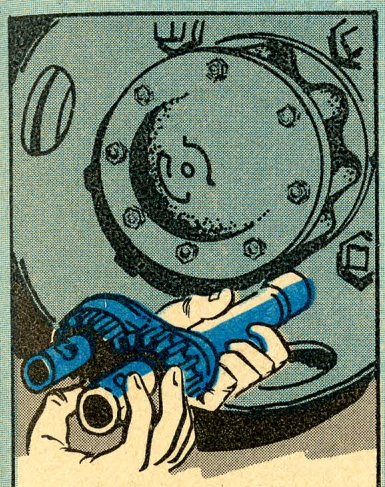


5. After you've loosened the square nut, you can remove the nut by using inner wrench and No. 36 handle as a T-wrench.

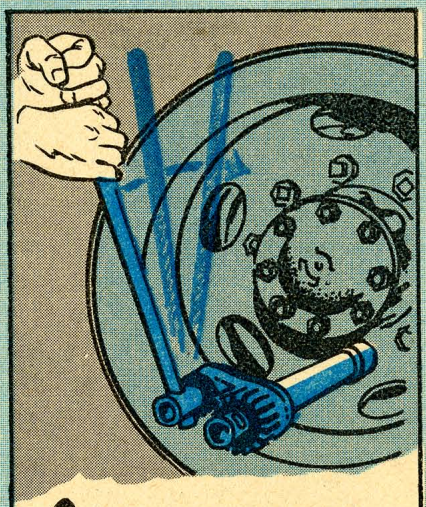


6. You can take out broken studs with the wrench by anchoring the inner wrench to the ground with the No. 36 tube handle. You apply leverage with the No. P1 bar handle in the small hole of the outer wrench to turn the hex-nut while the inner wrench holds the square nut.

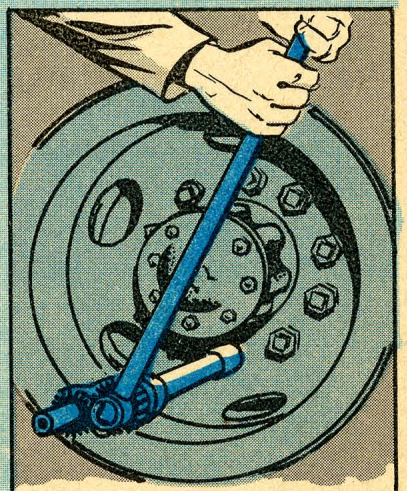
Now you know what your wrench set looks like. Here's what you can do with it...



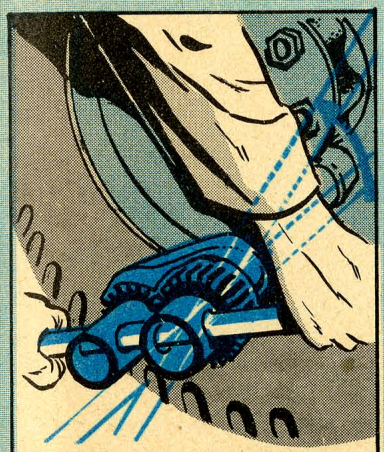
1. First off, this wrench is self-supporting. When it's on the wheel nuts it'll stay put. You can even stand on it and it won't fall off.



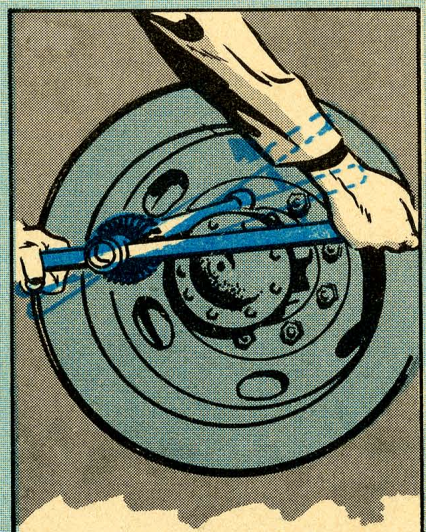
2. You can loosen the tightest hex-nut when you use the 18-in bar handle. Just put it through the smallest hole on the wrench and heave.



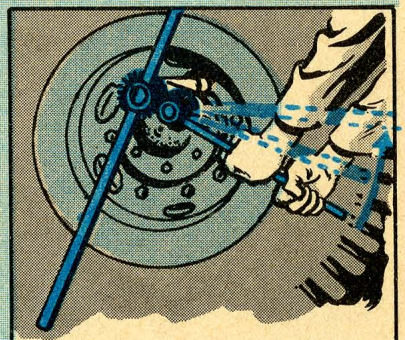
3. To loosen or tighten the square nut, you use the No. 36 tube handle. Put it through the large hole on the wrench and pull.



4. After you've loosened the hex-nut you can line up the two holes on the wrench and put the No. P1 bar handle through both holes. This makes a T-handle for removing the hex-nut.

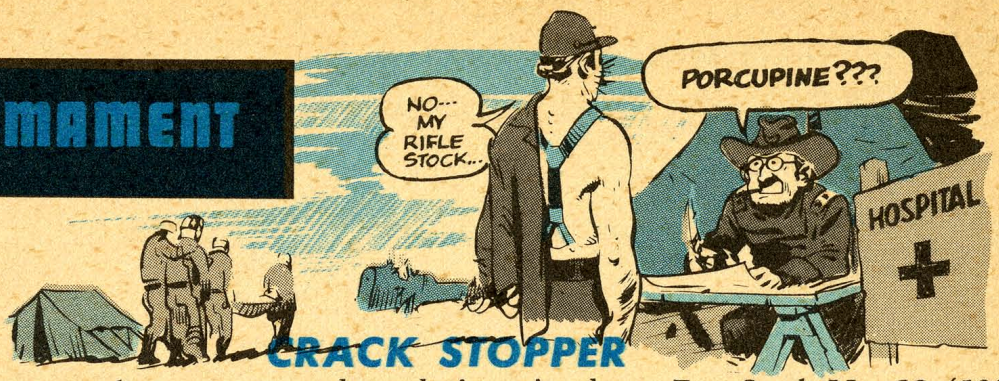


5. After you've loosened the square nut, you can remove the nut by using inner wrench and No. 36 handle as a T-wrench.



6. You can take out broken studs with the wrench by anchoring the inner wrench to the ground with the No. 36 tube handle. You apply leverage with the No. P1 bar handle in the small hole of the outer wrench to turn the hex-nut while the inner wrench holds the square nut.

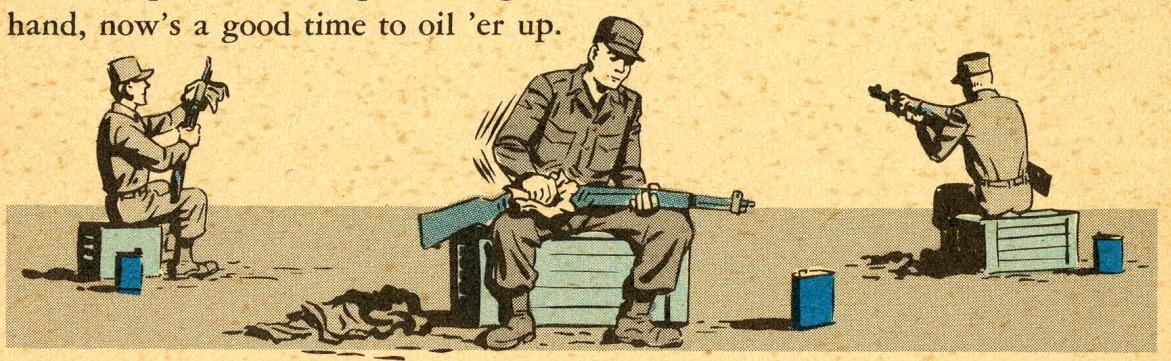
ARMAMENT



CRACK STOPPER

All your supply sergeant needs to do is write down Eng Stock No. 52-4533. 700.500, and you'll soon have the stocks on your rifle or carbine in good shape.

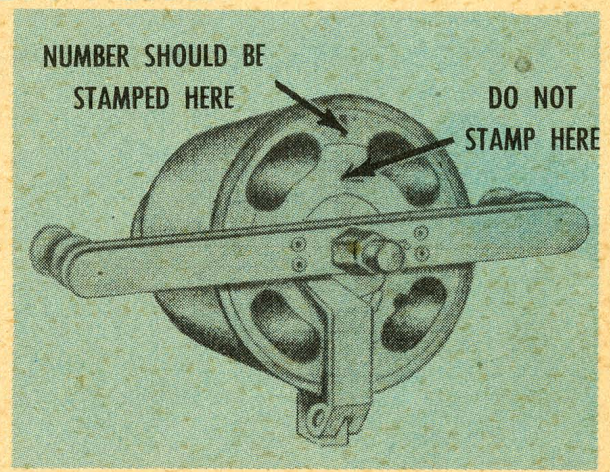
That's the number for raw linseed oil—the stuff you wipe on the stock once a month to prevent, or stop, cracking and dryness. If you already have the oil on hand, now's a good time to oil 'er up.



A word of caution, though. You may end up with the best looking stock in the company... but if you're not careful with the oil, you also may have the most ineffective rifle around. Seems the oil hardens on metal and fouls up moving parts. So keep it on wood only.

RECOILLESS PUNCH

Put that stamp down, Joe, and let's talk it over. Are you sure you know what to mark after firing 500 rounds from the 75-mm, 105-mm and 106-mm recoilless rifles? Some guys are stamping the breechblock, which isn't according to Hoyle.



TB Ord 555 says the number should be stamped on the vent assembly "directly below the rifle and model number located on the rim of the rifle chamber."

Remember: The original vent assembly is stamped "No. 1." You fire 500 rounds, draw another vent assembly and mark it "No. 2." After you've worked your way through four vent assemblies this way, you take your weapon out of service and turn it in to ordnance.

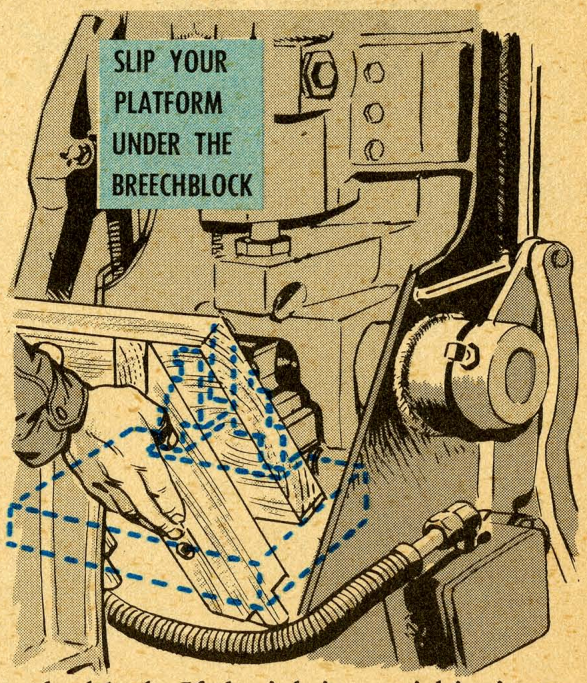
This platform eliminates

THE BREECHBLOCK BLUES

Removing the breechblock from a 90-mm M2-series gun has put a crack in the back of many a sad sack.

Whomp up the platform as shown below and you'll find that taking the breechblock out for cleaning or minor repairs will be speedier and safer. Not to mention that there's less chance of damage.

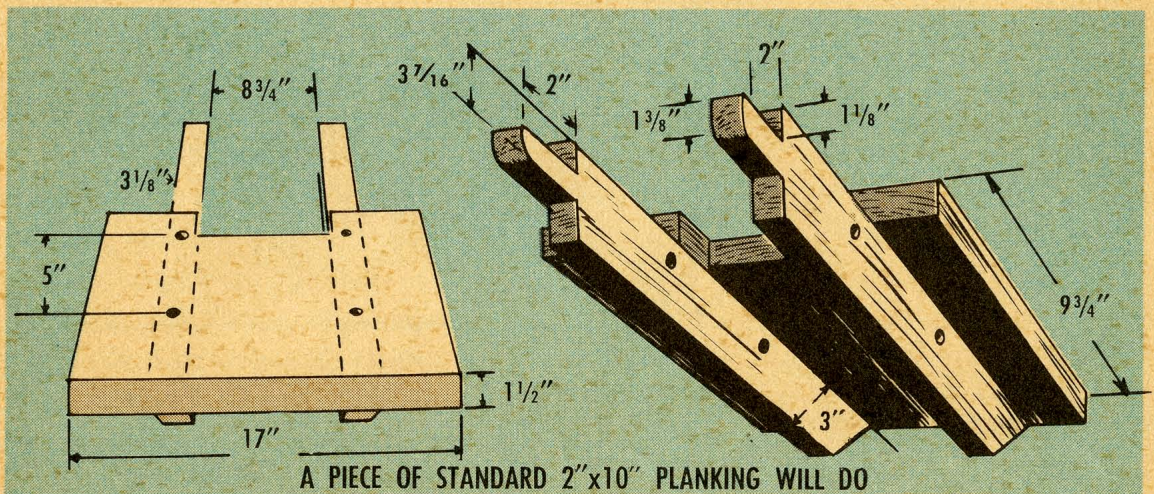
Construct the platform according to the diagram below. Slip it in under the block with the gun elevated, like it shows on the right, and secure it. That little hunk of wood makes pulling out the breechblock easier than tilting a pinball machine.



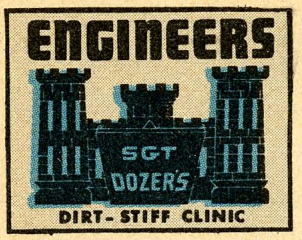
You've got two choices for working on the block. If the job is a quickie, it can be done right on the platform and the breechblock shoved right back into place. Even if the job will take a little while, a slim Joe who can move around without falling off the mount would want to work with the block on the platform. That does away with lifting the block off the mount and then back up again.

On the other hand, it might be easier to move the block down to something on the ground if the job's a tough one. It's also easier to do it that way if a guy's a little pudgy—like ol' Half-Mast—and has troubles standing on the mount.

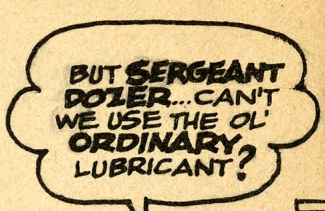
Better get right on it and put the platform together. A little do-it-yourself project now will save a lot of sweat and strain later.

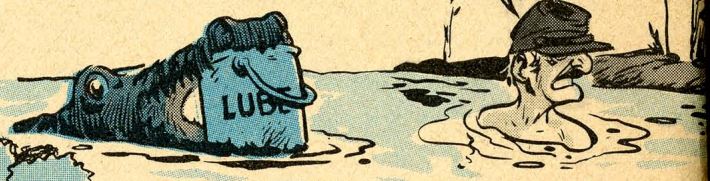


A PIECE OF STANDARD 2"x10" PLANKING WILL DO



TROPICAL TROUBLES





Dear Sgt Dozer,

Our outfit is located in a warm, tropical climate and we've been having more than our share of lubrication troubles on some of our Engineer equipment.

We've been using Grease, MIL-G-10924, No.2, to lubricate ball bearings, roller bearings and bronze bushings on jack shafts, clutch shafts, wheel bearings and turn table rollers, but they start overheating after two to four hours of operation. Grease runs out of the bearings and gets on friction and brake linings.

As a result, we've got unsafe operating conditions and excessive maintenance and repairs. Grease, General Purpose, No.2, MIL-G-2108, WB, worked swell on these items, but it's been replaced by GAA, Amendment 2.

And here's another problem: When cables, gears and chain are lubricated with VV-L-751a, CW-IC, Type 1, grade C, the lubricant will run off after four to six hours of operation. It isn't adequate for a hot climate and we have to reapply the lubrication twice daily to prevent excessive wear and damage to equipment.

Do you know of a way we could improve these conditions?

Captain F. A.

Dear Captain F. A.,

You've got a problem, all right, but the same thing came up not too long ago with some of the boys in the Canal Zone. They whipped the problems and here're the results:

GAA, Amendment 2, should do the job of lubricating those ball bearings, roller bearings and bronze bushings on jack shafts, clutch shafts, wheel bearings and turn table rollers. Reports from actual field tests show that this grease works well in warm climates.

But remember, when you're usin' GAA No. 2, make sure you remove all traces of any former grease, 'cause GAA No. 2 just won't mix with any other greases. You should find that GAA No. 2 will do the job. If nothing else'll work on those ball and roller bearings, try grease BR, Navy 14-LC3.

ENGINEERS
SGT DOZERS
DIRT-STIFF CLINIC

TROPICAL TROUBLES

Dear Sgt Dozer,

Our outfit is located in a warm, tropical climate and we've been having more than our share of lubrication troubles on some of our Engineer equipment.

We've been using Grease, MIL-G-10924, No.2, to lubricate ball bearings, roller bearings and bronze bushings on jack shafts, clutch shafts, wheel bearings and turn table rollers, but they start overheating after two to four hours of operation. Grease runs out of the bearings and gets on friction and brake linings.

As a result, we've got unsafe operating conditions and excessive maintenance and repairs. Grease, General Purpose, No.2, MIL-G-2108, WB, worked swell on these items, but it's been replaced by GAA, Amendment 2.

And here's another problem: When cables, gears and chain are lubricated with VV-L-751a, CW-IC, Type 1, grade C, the lubricant will run off after four to six hours of operation. It isn't adequate for a hot climate and we have to reapply the lubrication twice daily to prevent excessive wear and damage to equipment.

Do you know of a way we could improve these conditions?

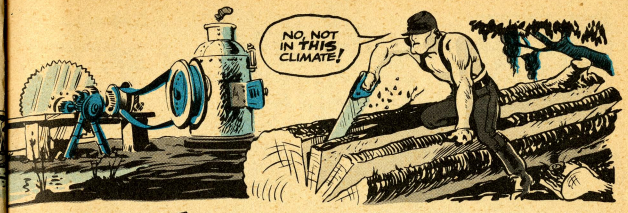
Captain F. A.

Dear Captain F. A.,

You've got a problem, all right, but the same thing came up not too long ago with some of the boys in the Canal Zone. They whipped the problems and here're the results:

GAA, Amendment 2, should do the job of lubricating those ball bearings, roller bearings and bronze bushings on jack shafts, clutch shafts, wheel bearings and turn table rollers. Reports from actual field tests show that this grease works well in warm climates.

But remember, when you're usin' GAA No. 2, make sure you remove all traces of any former grease, 'cause GAA No. 2 just won't mix with any other greases. You should find that GAA No. 2 will do the job. If nothing else'll work on those ball and roller bearings, try grease BR, Navy 14-LC3.



As for your other problem, you ought to use the Type II, C Grade, chain exposed gear and wire rope lubricant in lieu of Type I. Type II contains a rust inhibitor and is best for tropical climates.

You can get the best service from the C grade of such lubricants if you'll heat 'em and apply 'em hot with a brush or a swab.

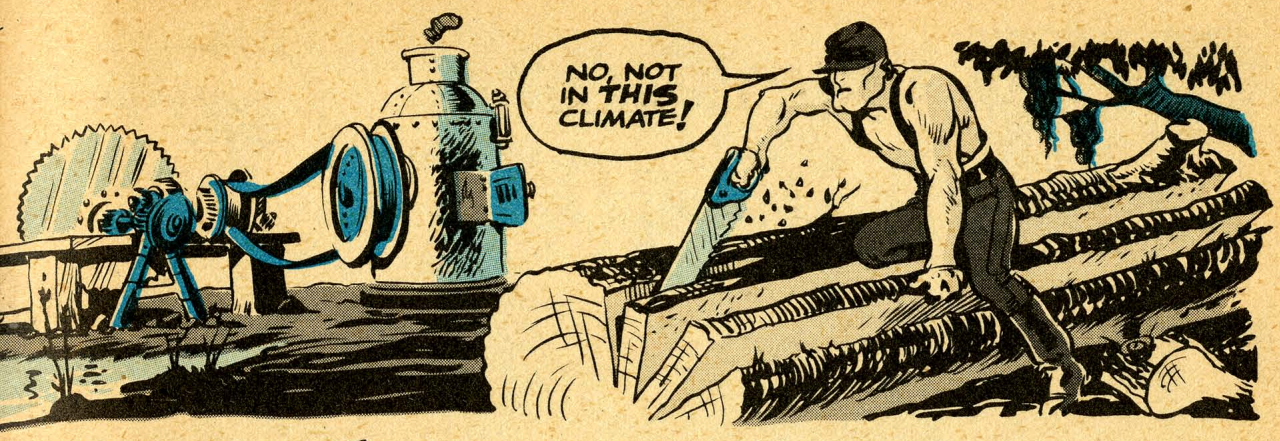
Before replacing wire cables on new equipment or when removing them during major overhauls, the cables should be soaked in hot lubricant. This'll allow the lubricant to soak all the way into the core of the cable.

Those tropical temperatures you've got sure can be troublesome. Betcha you have lots of trouble with moisture, too. This unwelcome water could well be part of your lubrication problems. Once water gets in those parts, it'll cause rust on the friction surfaces and lead to more wear and tear than usual. Water'll also cause grease to run right out of a bearing, and the surfaces will be short on grease to do the job.

Here are a couple of points to remember when handling lubricant where the weather's the tropical kind. When you're taking lube from a can, be sure and wipe away all the dirt and moisture from around the opening before unscrewing or taking off the plug or cap.

And when those containers aren't in use, keep 'em closed tight. Some oils and greases'll lap up water like a blotter soaks up ink. Moisture will not only change the appearance of grease, but it'll greatly reduce its value as a lubricant.

Sgt Dozer



As for your other problem, you ought to use the Type II, C Grade, chain exposed gear and wire rope lubricant in lieu of Type I. Type II contains a rust inhibitor and is best for tropical climates.

You can get the best service from the C grade of such lubricants if you'll heat 'em and apply 'em hot with a brush or a swab.

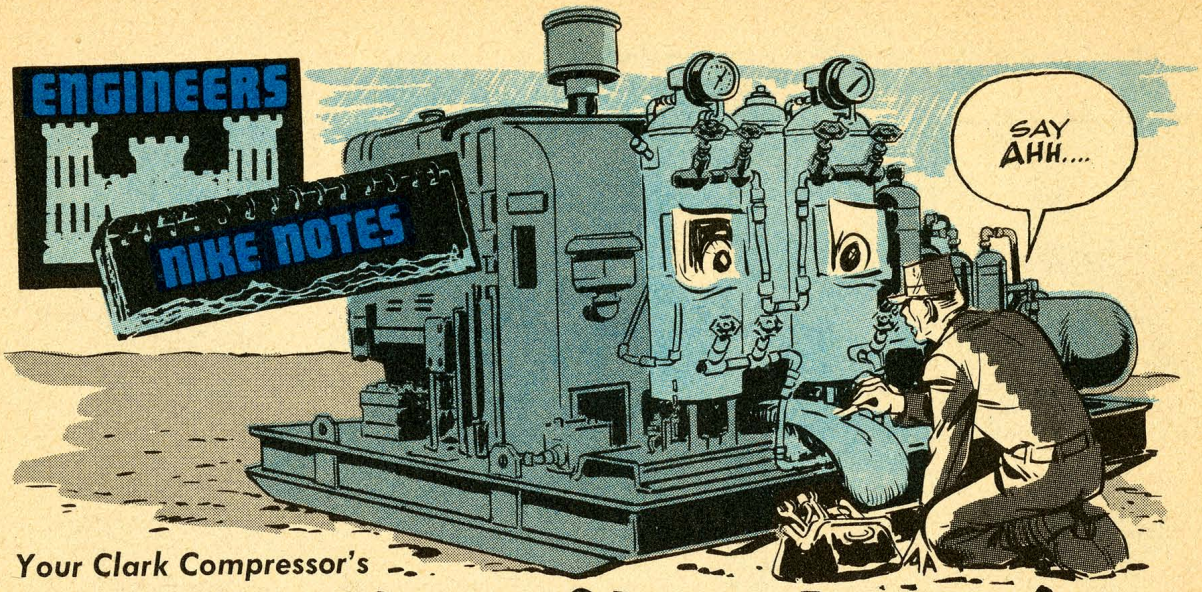
Before replacing wire cables on new equipment or when removing them during major overhauls, the cables should be soaked in hot lubricant. This'll allow the lubricant to soak all the way into the core of the cable.

Those tropical temperatures you've got sure can be troublesome. Betcha you have lots of trouble with moisture, too. This unwelcome water could well be part of your lubrication problems. Once water gets in those parts, it'll cause rust on the friction surfaces and lead to more wear and tear than usual. Water'll also cause grease to run right out of a bearing, and the surfaces will be short on grease to do the job.

Here are a couple of points to remember when handling lubricant where the weather's the tropical kind. When you're taking lube from a can, be sure and wipe away all the dirt and moisture from around the opening before unscrewing or taking off the plug or cap.

And when those containers aren't in use, keep 'em closed tight. Some oils and greases'll lap up water like a blotter soaks up ink. Moisture will not only change the appearance of grease, but it'll greatly reduce its value as a lubricant.

Sgt Dozer



Your Clark Compressor's

Gotta Have Clean Innards

The boys handling the depot maintenance chores on those Clark Model HO-6-4C air compressors used in the assembly area at Nike sites have come up with some pertinent poop concerning this particular piece of equipment. It seems that they've been finding sand, sludge, dirt—and even water—in the crankcase of the compressor and in the mechanical lubricator.

Of course, you well know that having these "killers" in the guts of your equipment will have it on deadline in double-quick time. It'll also cut down on the operating efficiency, so why not get busy and do something about it?

Your best bet's to clean all McCord mechanical lubricators, air cleaners and compressor crankcases. Also, replace compressor crankcase oil filters on all units.

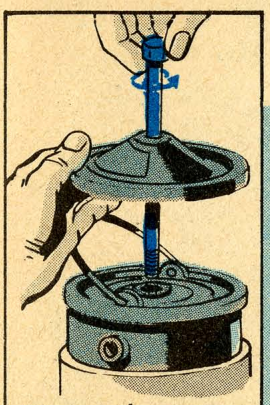
Here's what you do:

First, let's take the compressor and check it out. Remove the crankcase cover and drain out the oil. You can't get it all out by draining, so pull out what's left with a hand-operated suction gun. Then grab yourself some diesel fuel and flush the entire crankcase with it. But remember, never operate the compressor while the flushing oil's in it—never.

Once all the flushing oil's removed, give the crankcase a careful visual inspection to make sure it's clean. Then refill the crankcase with the right lube for the temperature range of your area and put the crankcase cover back on. In case you're not clear on what weight lube you should use in your area, check your lube order.

Use Napthenic base lubricating oils such as Sun Solnus, Socony-Vacuum DTE, or Texaco Regal Napthenic base oils in the crank case and in the mechanical lubricators of high pressure air compressors. Select the proper viscosity of these trade-name oils to conform with the temperature key on your lubrication order.

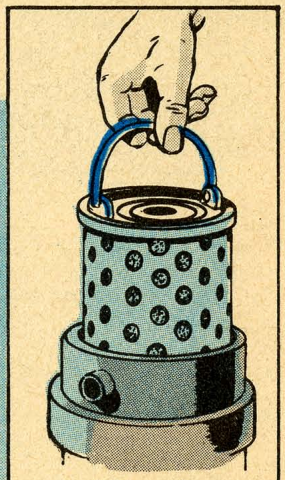
Now comes the crankcase oil filter



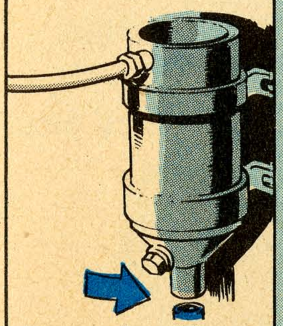
Remove the cover screws and take off the cover...

and spring.

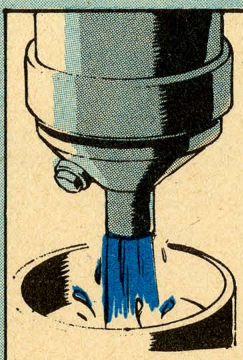
After that, off comes the cover gasket, pressure plate ...



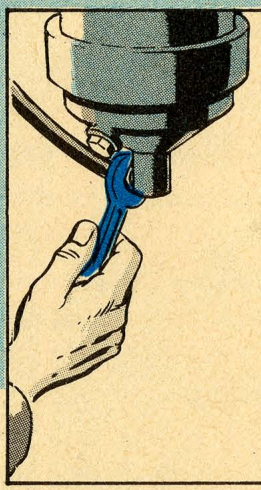
and oil filter element.



Remove the oil line from the bottom of the filter case.

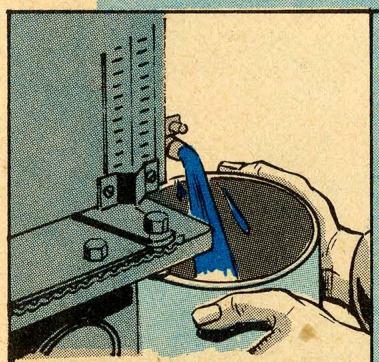


Clean out the inside of the case with diesel oil.

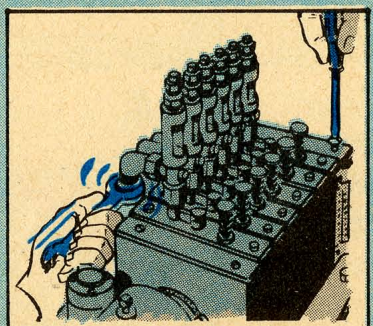


Then wipe 'er dry, install a new filter element and put back the pressure plate, gasket, spring, cover and cover screws. All you have left to do then is re-install the oil line in the bottom of the oil filter case.

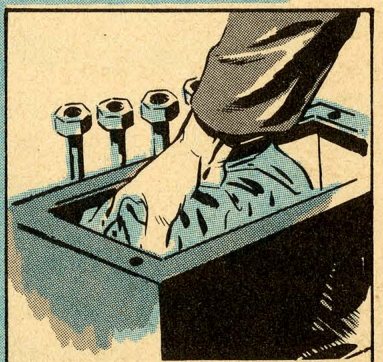
Finally, let's give the business to the McCord mechanical lubricator



You'll find a drain plug on the side of the lubricator reservoir. Take this out and drain the oil.



Disconnect the oil feed lines (there're six of 'em) and the cover holding screws. And off comes the cover.

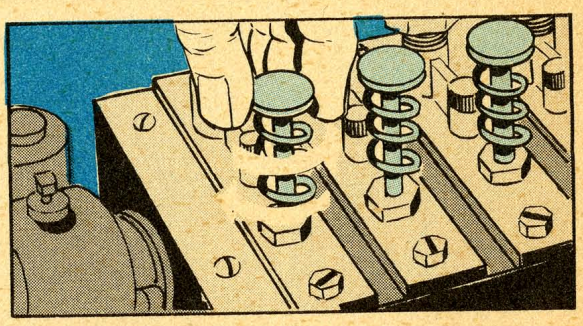


Now's the time for another wash job, so swab out the inside of the lubricator reservoir.

NIKE NOTES

Use diesel fuel for this, too. After draining out the diesel fuel, give the reservoir time to dry and then inspect it closely to make sure it's clean. If it is, re-install the cover and connect the oil lines. In refilling with lube use plenty caution. The compressor has to have highly refined straight mineral lubricants of a low carbon residue.

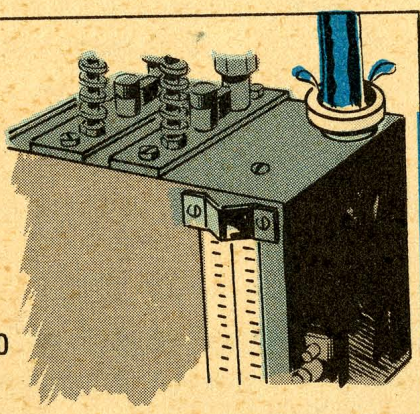
Before starting the compressor, the mechanical lubricator has to be primed. First of all, you have to make sure that the lubricator cylinder is completely free of air. Normally, the oil-flow adjustment is made by turning the priming plunger either clockwise or counterclockwise, depending on whether you want to increase or decrease the rate of oil flow.



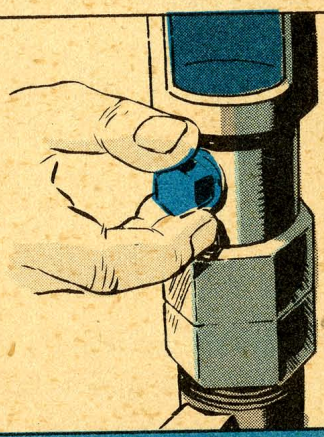
TURN PLUNGERS FOR OIL-FLOW ADJUSTMENT.

Here's the way you bleed air from the lines and prime the pumps:

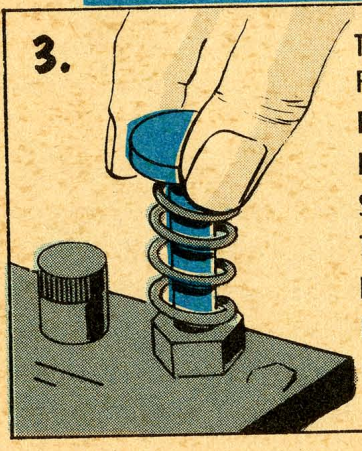
1. ADD ENOUGH OIL TO BRING LEVEL UP TO REQUIRED MARK.



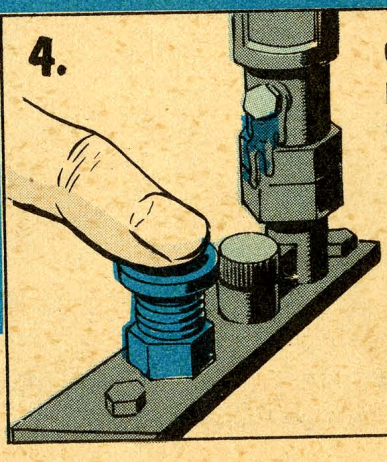
2. BACK OUT BLEEDER SCREW FOUR OR FIVE TIMES.

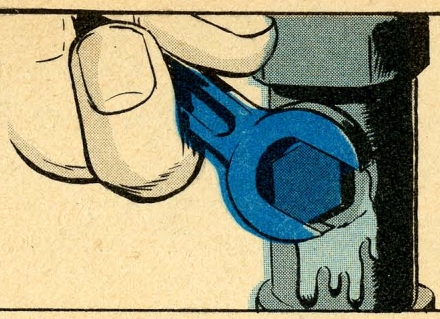


3. TURN PUMP PRIMING PLUNGER TO LEFT AS FAR AS STOP POSITION. THIS WILL ALLOW FOR MAXIMUM PUMPING CAPACITY.



4. OPERATE PRIMING PLUNGER BY HAND TILL CLEAR, CLEAN OIL FLOWS FROM BLEEDER SCREW HOLE.

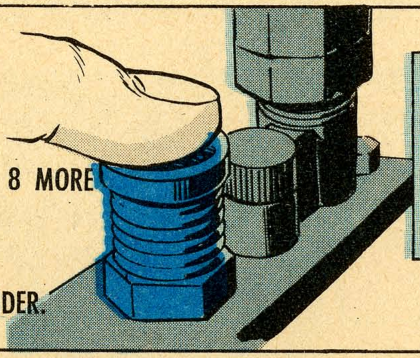




6. Disconnect the lubricator oil lines at the fitting nearest the cylinder.

7. Again operate the priming plunger until clear, clean oil, with no trace of air bubbles, flows from the end of the oil line.

8. Connect the oil line to the cylinder fitting and give it a good tightening.



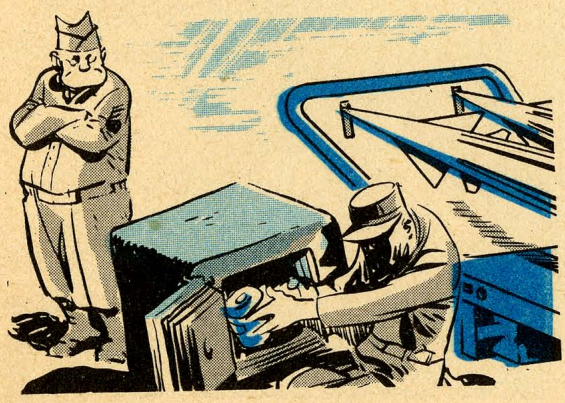
10. For each of the cylinder lubricator pumps, just repeat the steps.

Now that you have everything assembled and ready to go, run the compressor for a few minutes and inspect the oil filter and piping for possible leaks. Also, check the mechanical lubricator for correct flow while in operation and after it's shut down.

With all this taken care of, your compressor ought to run like a charm. One thing's certain—you'll at least assure your equipment of longer life and better operating efficiency. The field and depot maintenance boys will also have to quit squawking.

HANDS OFF THE CAST-OFFS

Keep your Nike pure. Toss out any discarded, used, borrowed or scrounged replacements parts you may've stashed away for a rainy day.

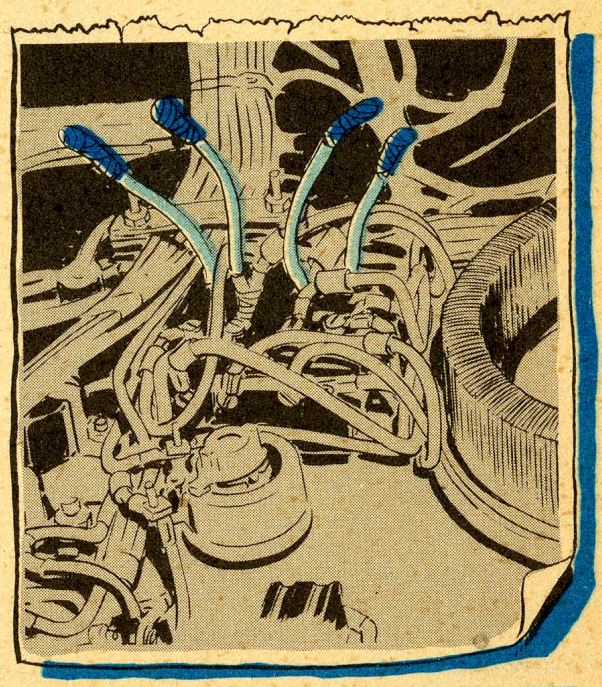


That kind of supply is strictly taboo for the Nike... it gets fixed with new repair parts only.

Second-hand parts are also out for the Nike's ground-handling equipment and for its testing-equipment.

In a combat emergency it's up to the missile officer and the Ordnance officer to OK the use of scrounged replacement parts on the Nike and its equipment.

SWITCH JUMPERS on NEW GENERATORS



When you're getting set-up to regulate voltage by remote control from a Nike or an M33 van, make sure the Local-Remote control switch on the generator (Hobart 400-cycle, HF 30-G and HF 30-GM) is fixed like this:

The jumpers on the switch which run between leads 8 and 34 and between leads 10 and 58 must be disconnected. All you need do is remove one end of each jumper and tape it up. Then you're ready to put the switch in the Remote control position.

If you later return to strictly Local control you untape the ends and connect the jumpers to their respective leads.

CAUTION: When these jumpers are pulled, take care that the switch goes back to Local position whenever the power cables are disconnected from either the van or the generator. Otherwise you'll not be able to control the voltage at the generator, and there's also danger that the regulator rheostat will be damaged.

The other jumpers on the switch (jumpers connecting leads 15 and 79 and jumpers connecting leads 19 and 76) need to be removed only when the generator's used with equipment that's rigged to handle **frequency** by remote control —on Nike and M33 equipment frequency is regulated by Local control only.

Of course, there's no need for alarm if these leads are also disconnected when this generator's used with Nike or M33 systems. Only thing is, when you're checking out frequency trouble you have to remember to throw the switch back to Local control before you press the frequency control button.

Nike Launching and Transporting Rail Wheels Lubing—

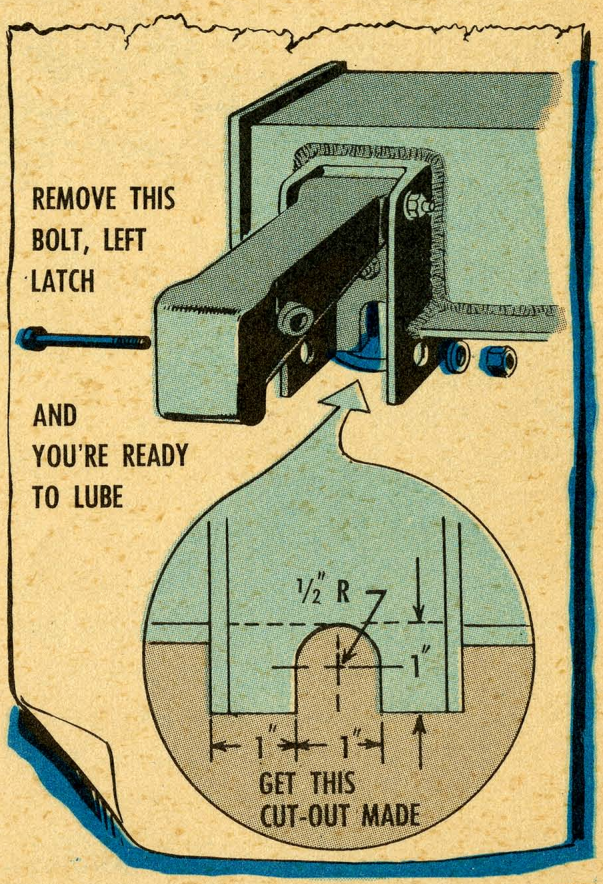
TIME FOR A CHANGE

It's time for a change to make it easier to lube the Nike launching and transporting rail wheels.

Mother Ordnance whipped up a change to quiet weeping and wailing from you missile outfits. It just cuts out a hunk of the rail and makes the grease fitting easier to get at.

With the cutout, only the bottom bolt 501810 has to come out to let you pivot latch 8013325 upward and goose the wheel with grease.

For slick launching and transporting rail wheels, bring in your Ordnance support people who are authorized to make this change. That little cutout makes all the difference in good preventive maintenance. Rails having Serial Number 1225 and above got this improvement on the production line. If you have an earlier one, this is for you.



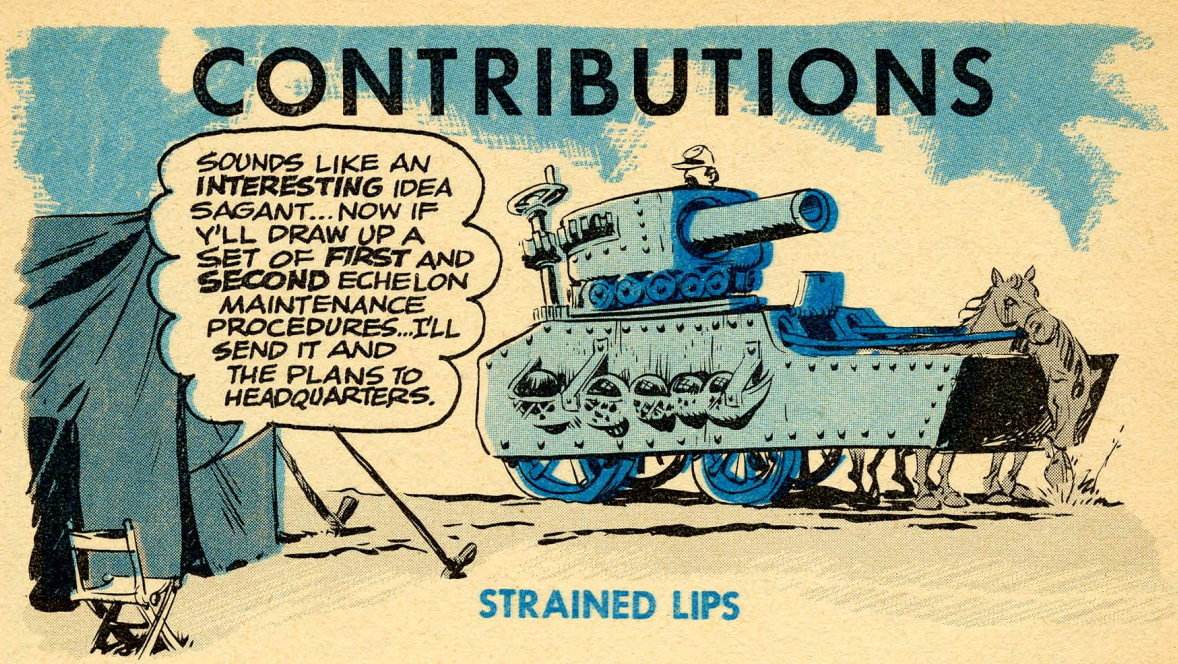
YOUR LITTLE WHITE BOOK

There's no question about it—an index'll tell you lots of things you want to know.

For example, if you're looking for a technical manual (TM), technical bulletin (TB), supply bulletin (SB), lubrication order (LO), or modification work order (MWO), then DA Pamphlet 310-4 (30 Nov 55) is the publication you should get your mitts on. And to keep up to date watch for the changes. Change 4 (5 Apr 56) is the latest.

Your publications are listed according to number in the front of the index and alphabetically according to subject starting on page 382.

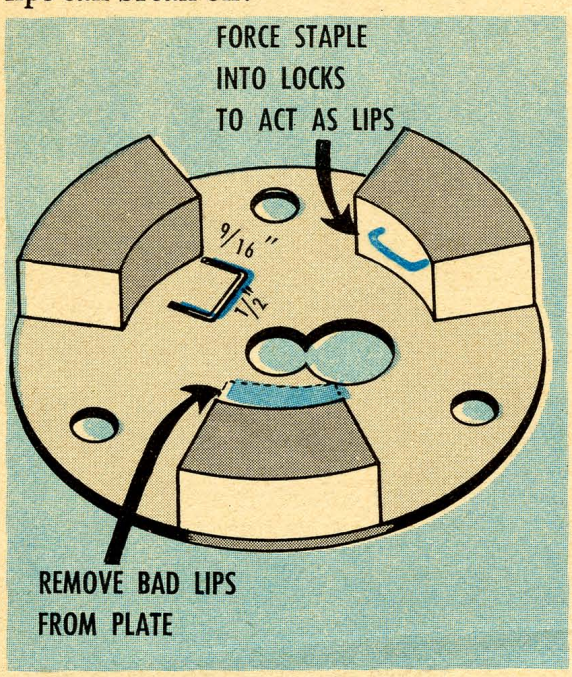
CONTRIBUTIONS



STRAINED LIPS

Dear Editor,

That horn button plate (Ord Stock No. G742-7373216), which holds the horn button in place on your G742 2½-ton trucks, has three rubber locks on it. I've found that the lips on these locks have a lot of strain put on 'em by the rubber horn button cover, and that these lips can break off.



Rather than deadlining a truck for want of one of these plates, we formed three staples. ½-in across with 9/16-in prongs, out of some old choke wire. We removed the bad lips from the plate and forced the staples into the locks to act as lips. This makes the plate so much stronger.

Mr. C. D. W.

(Ed Note—This is a good idea for keeping your trucks off deadline until you can get another part and install it.)

CARD SHARKS

Dear Editor,

On the 9-71 Locator and Inventory Card we avoid possible confusion if we divide the third column (due-out and on-hand) into three spaces, instead of two like PS 26 (pages 15-16) shows.

The added space is headed "Due-in." It takes the due-in info out of the card's

fifth column (where it can get mixed up with issue slip number or vehicle number).

Sgt R. H. M.

(Ed Note—Anything that makes your stock record cards easier to work with and easier to read is OK. The important thing is that they give accurate demand data.)

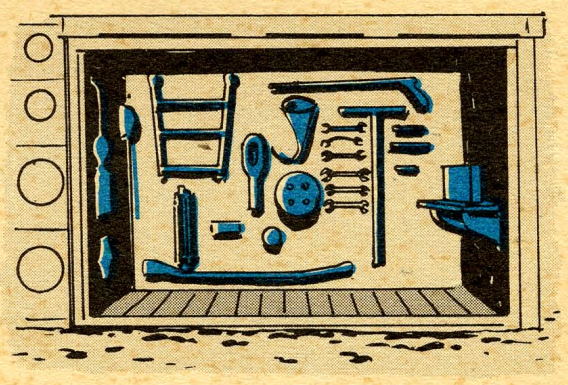
AAA GUN REVETMENTS

Dear Editor,

Here are a couple of ideas we worked out in our gun revetments.

First of all, we use a uniform sandbag. We measure just three gallons of sand into each bag, and make up a few spares at the time we build the revetment. This means that each spare bag will fit right in the same space that any other bag occupies. When a rabbit gnaws his way into one of them we can drop the spare in without any need to adjust the courses. Also, in building up our courses, we lay salvaged fence wire flat between them. We find this ties the whole thing together, and makes it possible to work around on the revetment without knocking it down.

Inside, we have built racks for our ready ammunition, allowing for sandbags to isolate the VT rounds, as required. We also have racks for our carbines and personal gear, as well as sheltered tool racks for our gun tools.



We find that these racks make it very easy to put our hand on anything we need, day or night, and at the same time we have a neat gun site for inspection.

The Gang at A Btry, 519 AAA Bn.

MOVE IT OVER

Dear Editor,

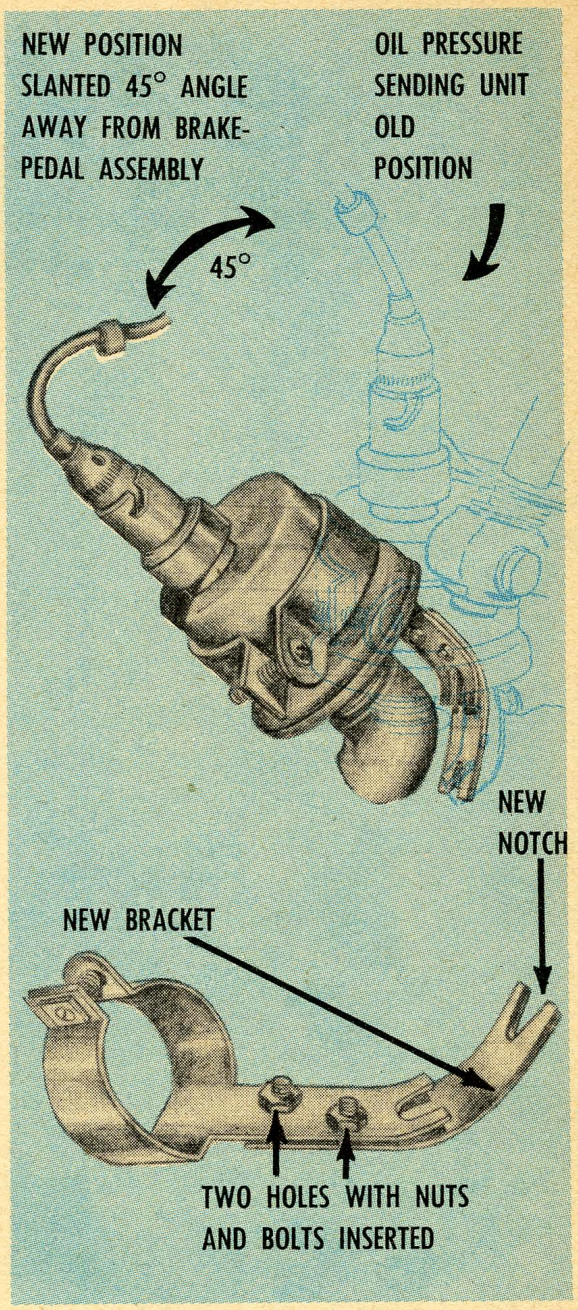
Stomping the brake pedal all the way down in the M38 Jeep can let fly a barrage of sparks. When that pedal is the least bit wobbly, the brake-pedal-assembly can hit the hot 24-volt lead hooked up to the top of the oil-pressure-sending-unit.

To avoid possible fires or damage to other electrical units, we turned the oil pressure sending unit forward at a 45-degree angle away from the brake-pedal-assembly.

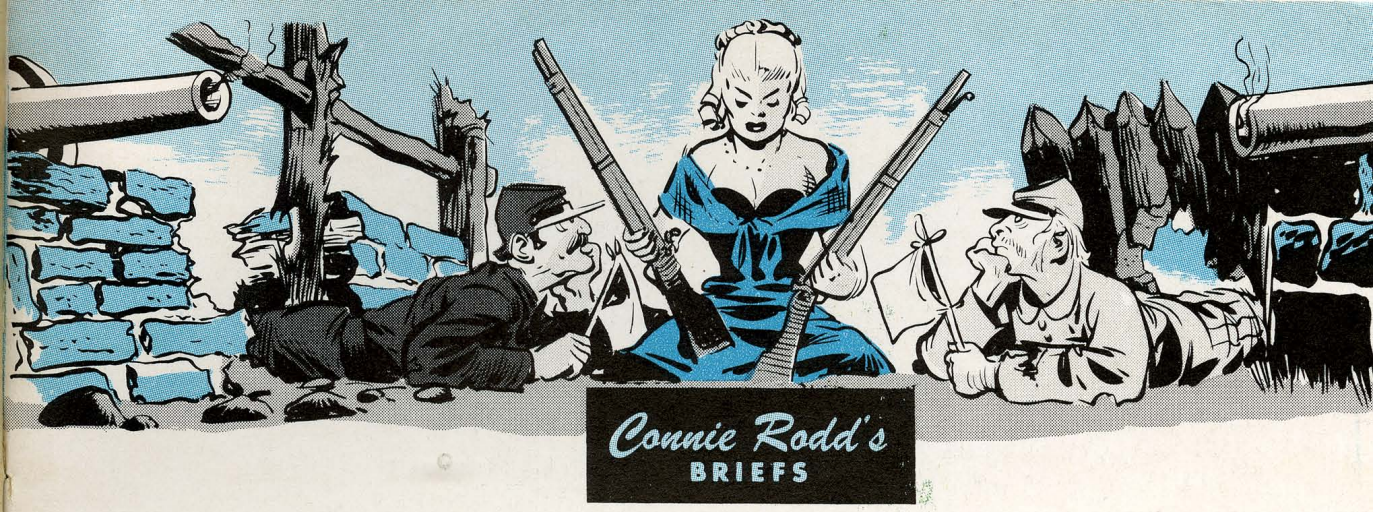
To hold the unit at this angle, we made a longer bracket from scrap metal to go to the bolt on the bell housing. In the bracket, we made another notch to fit the bell-housing bolt. This new piece was attached to the original bracket by drilling two holes and inserting two bolts and screws. The bracket was then bent in a vise to get a good fit.

You can put the oil-pressure-sending-unit into the bracket in two different positions—depending on how it screws into the elbow. We put ours with the top of the unit flush against the engine block. This helps to keep the 24-volt lead away from the brake-pedal-assembly.

Sgt Herman Herrera, Jr.
Fort Sill, Oklahoma



(Ed Note—Don't go fussing with that oil-pressure-sending-unit till you've checked your brake adjustment. If your brakes are adjusted right, it'll probably straighten this problem out. Of course, if your brake pedal and shaft are worn pretty bad, latch onto your Ordnance support outfit and have them replace the parts.)



Loose screws

Seems some more M63 mounts for the .50-cal machine gun got shipped out with the eight ⅜-16 base plate screws loose. Check any new mounts to make sure your screws are tight.

Paint or enamel?

Is it is or is it ain't enamel or paint? No matter what you call it, they'll both do the same job—that is if you're comparing Paint, OD, Ord Stock No. Y004-8017319 with Enamel, OD, Eng Stock No. 52-3433.700.005. They're both used in the maintenance of the radome covering the acquisition antenna. In the future, order the Engineer stock number since the Ordnance number is no good.

Before or after

Here's a bit of poop for you guys who fool with the G741 ¾-ton trucks: When you go to adjust the timing, set it for 2 degrees **before** top dead center like it says in para 126c of TM 9-8030 (May 55). The same manual, in para 123b, says to set it at 2 degrees **after** top dead center.

Lots mean a lot

Artillery ammo should always be kept together and fired together according to lot number and weight. Gives you less difference between consecutive rounds —more hits per gun per minute.

Huh? What he say?

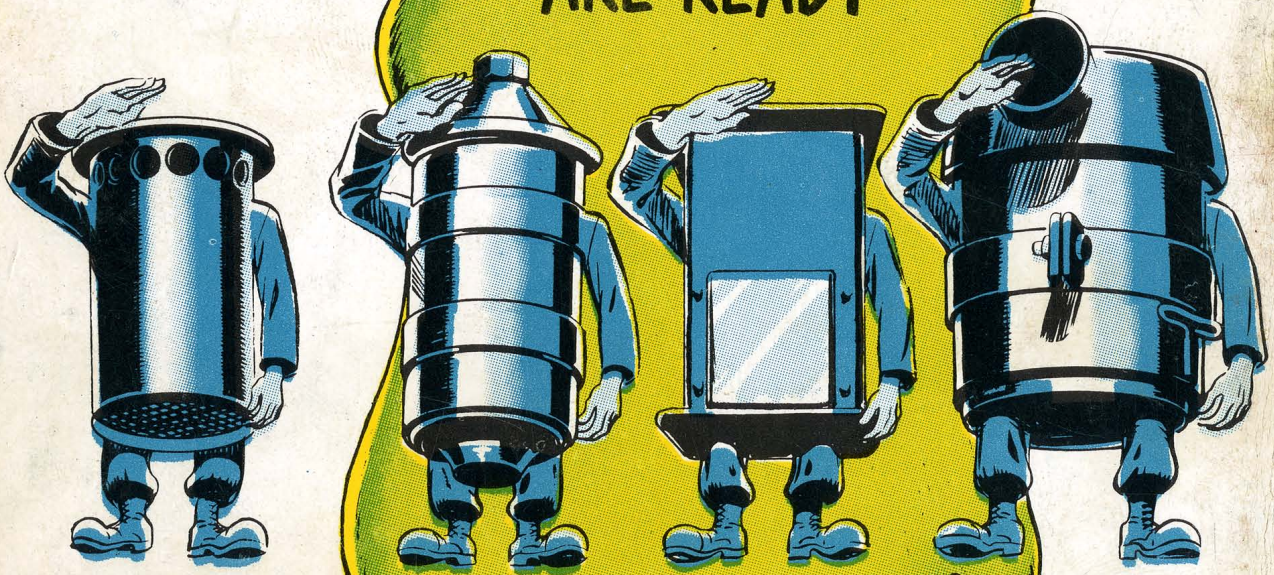
When a buddy of yours says he used Super-Duper GAA on his vehicles, don't stop and wonder—he means he used GAA Amendment 3, which is brand new. This stuff is supposed to be really super, especially when you compare it to the old GAA's—Amendment 1 and 2. The new GAA will be issued just as soon as the old stocks of GAA Amendment 1 and 2 are exhausted.

New jeep manual

Your manual on the M38 Jeep has been brought up-to-date. It now goes under the number of TM 9-8012 (Jan 56). Yours should be coming through pretty quick, so keep your eyes open for it.

FILTERS

ARE READY



TO WORK
FOR
YOU

GIVE 'EM A CHANCE

KEEP THEM CLEAN OF MUCK AND GRIT